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UNITED STATES PUBLIC HEALTH SERVICE

RUPERT BLUE, SURGEON GENERAL

PUBLIC HEALTH BULLETIN NO. 93

JUNE, 1918

TRANSACTIONS
OF THE
FIFTEENTH ANNUAL CONFERENCE

OF STATE AND TERRITORIAL HEALTH
OFFICERS WITH THE UNITED STATES
PUBLIC HEALTH SERVICE

HELD AT WASHINGTON, D. C.

APRIL 30 AND MAY 1, 1917



WASHINGTON
GOVERNMENT PRINTING OFFICE

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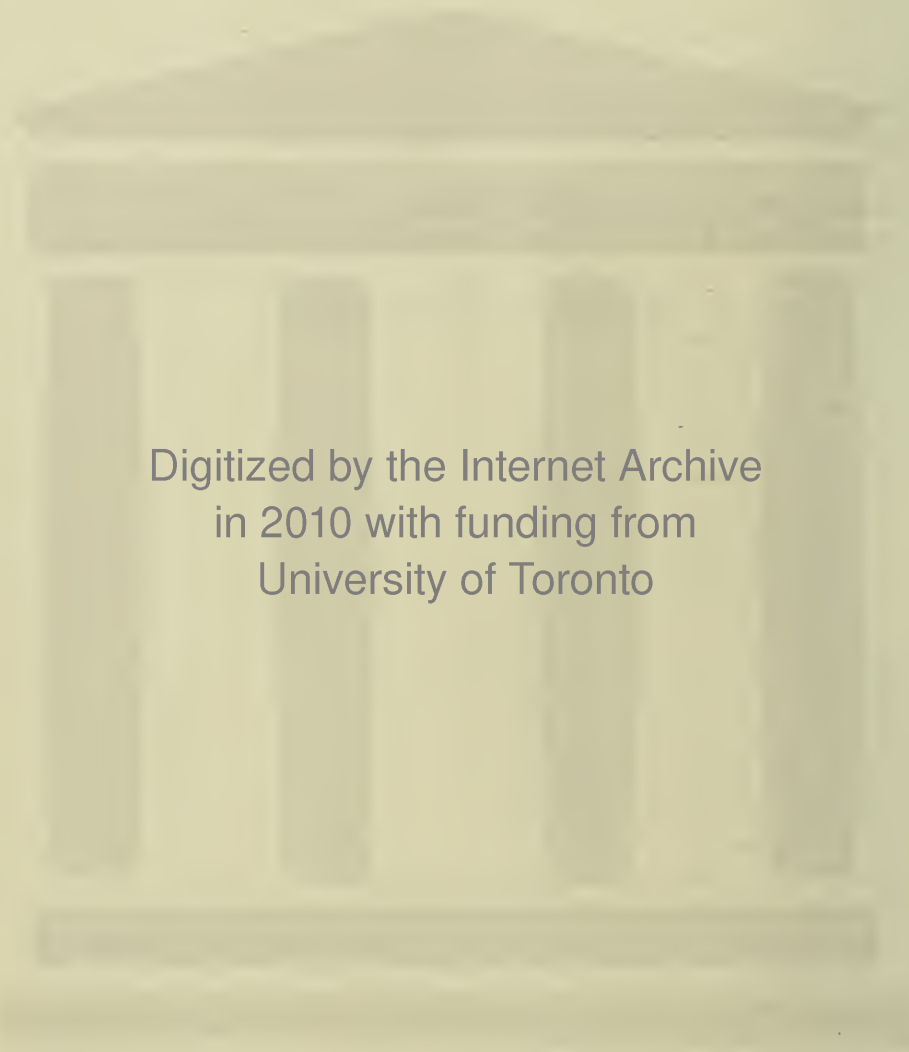
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1918



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LETTER CALLING THE CONFERENCE.

TREASURY DEPARTMENT,
BUREAU OF THE PUBLIC HEALTH SERVICE,
Washington, February 27, 1917.

DEAR DOCTOR: I have the honor to inform you that the fifteenth annual conference of State and Territorial health authorities with the United States Public Health Service will be held at Washington, D. C., June 1 and 2, 1917, beginning at 10 a. m., June 1.

Public-health matters of importance both to the Federal and State health authorities will be discussed at the conference, and it is respectfully requested that your State be represented.

Copy of the provisional program will be mailed to you in the near future. In the meantime you are invited to make suggestions in regard to subjects which in your opinion should be brought to the attention of the conference.

I shall be obliged to you for letting me know as soon as practicable the name of the delegate selected to represent your State.

Respectfully,

RUPERT BLUE,
Surgeon General.

TELEGRAM CHANGING DATE OF THE CONFERENCE.

APRIL 11, 1917.

By reason national situation date conference State and Territorial health authorities with service advanced to meet Washington April thirtieth-May first. Urge your State send delegate. Please acknowledge.

(Signed) BLUE.

STANDING COMMITTEES.

MORBIDITY RETURNS.

Dr. A. J. Chesley, chairman.	Dr. C. Hampson Jones.
Dr. F. M. Meader.	Dr. J. W. Trask, secretary.
Dr. E. R. Kelley.	

SANITATION OF PUBLIC CONVEYANCES.

Dr. Oscar Dowling, chairman.	Dr. W. F. Cogswell.
Dr. J. N. Hurty.	Dr. C. H. Creel, secretary.
Dr. T. B. Beatty.	

INTERSTATE QUARANTINE REGULATIONS.

Dr. J. S. Fulton, chairman.	Dr. S. J. Crumbine.
Dr. E. G. Williams.	Dr. T. B. Beatty.
Dr. H. M. Bracken.	Dr. W. C. Rucker, secretary.

INTRASTATE QUARANTINE REGULATIONS.

Dr. W. C. Woodward, chairman.	Dr. E. R. Kelley.
Dr. C. W. Garrison.	Dr. W. C. Rucker, secretary.
Dr. W. A. Sawyer.	

HEALTH INSURANCE.

Dr. W. C. Woodward, chairman.	Dr. B. S. Warren, secretary.
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RURAL SANITATION.

Dr. W. S. Rankin, chairman.	Dr. J. A. Hayne.
Dr. T. D. Tuttle.	Dr. L. L. Lumsden, secretary.
Dr. C. F. Dalton.	

STANDARD METHODS OF PUBLIC-HEALTH ACCOUNTING.

Dr. A. J. McLaughlin, chairman.	Dr. G. F. Swarts.
Dr. C. St. Clair Drake.	Dr. Carroll Fox, secretary.
Dr. S. L. Jepson.	

INCREASING EFFICIENCY OF CONFERENCES.

Dr. L. R. Williams, chairman.	Dr. T. D. Tuttle.
Dr. W. C. Woodward.	Dr. J. W. Kerr, secretary.

PROVISIONAL PROGRAM.

Opening remarks by the Surgeon General.

Roll call of delegates.

Appointment of committees.

REPORTS OF STANDING COMMITTEES.

Morbidity returns: Dr. A. J. Chesley.

Statistical uses.

Standard morbidity tables.

Reciprocal notification.

Endemic index.

Amendments to model law.

Sanitation of public conveyances: Dr. Oscar Dowling.

Interstate quarantine regulations: Dr. J. S. Fulton.

Intrastate quarantine regulations: Dr. C. W. Garrison.

Health insurance: Dr. W. C. Woodward.

Standard methods of public health accounting: Dr. A. J. McLaughlin.

Increasing efficiency of conferences: Dr. R. L. Williams.

Rural sanitation: Dr. W. S. Rankin.

NEW BUSINESS.

The need of correlating Federal, State, and local health agencies for service in times of emergency.

Present status of employment of full-time health officers in the several States, Territories, and the District of Columbia.

Local health organization; its needs and the means necessary to improve it, especially in rural sections.

The typhus fever situation; extent of prevalence, measures of prevention, and additional needs.

The utility of collecting by correspondence public health information for publication:

(a) Sanitary legislation.

(b) Prevalence of malaria.

(c) State appropriations for public health purposes.

The need of morbidity statistics from industries, and means for their collection.

The need of morbidity statistics from industries, and means for hospitals, and sanatoria, and means for their collection.

The need of morbidity statistics from penal institutions, and means for their collection.

Are health authorities using all available information and means to reduce the morbidity from pneumonia, syphilis, and tuberculosis?

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FIFTEENTH ANNUAL CONFERENCE OF STATE AND TERRITORIAL HEALTH AUTHORITIES WITH THE UNITED STATES PUBLIC HEALTH SERVICE.

TRANSACTIONS.¹

MORNING SESSION, APRIL 30, 1917.

The fifteenth annual conference of State and Territorial health authorities with the United States Public Health Service was called to order at 10 o'clock a. m., April 30, 1917, at the building of the Public Health Service, New Jersey Avenue and B Street SE., Washington, D. C.

The following persons were present during the conference:

REPRESENTATIVES OF THE STATES.

- Alabama: Dr. S. W. Welch.
- Arkansas: Dr. C. W. Garrison.
- California: Dr. W. A. Sawyer.
- Connecticut: Dr. John T. Black and Dr. Arthur J. Wolff.
- Delaware: Dr. A. E. Frantz.
- District of Columbia: Dr. William C. Woodward, Dr. William C. Fowler, and Dr. J. J. Kerrigan.
- Florida: Dr. J. Y. Porter, Dr. S. R. M. Kennedy, and Dr. W. H. Cox.
- Hawaii: Dr. J. S. B. Pratt.
- Idaho: Dr. Edward T. Biwer.
- Illinois: Dr. C. St. Clair Drake and Dr. George Thomas Palmer.
- Indiana: Dr. J. N. Hurty, Dr. J. H. Huett, and Dr. Hugh H. Couring.
- Iowa: Dr. Walter L. Bierring.
- Kansas: Dr. S. J. Crumbine.
- Kentucky: Dr. A. T. McCormack and Dr. John G. South.

¹ Owing to the delay occasioned by war printing, it was found impossible to have this bulletin in proof early enough to give the speakers an opportunity, as in the past, of looking over their remarks before publication.

Louisiana: Dr. Oscar Dowling.
 Maine: Dr. A. G. Young.
 Maryland: Dr. John S. Fulton and Dr. C. Hampson Jones.
 Massachusetts: Dr. A. J. McLaughlin, Dr. E. R. Kelley, and Dr. Frank Wood.
 Michigan: Dr. R. M. Olin and Dr. Guy M. Keifer.
 Minnesota: Dr. H. M. Bracken, Dr. A. J. Chesley, and Mr. H. A. Whittaker.
 Mississippi: Dr. W. S. Leathers.
 Montana: Dr. W. H. Cogswell.
 Nebraska: Dr. H. B. Cummins.
 New Hampshire: Dr. I. A. Watson.
 New Jersey: Dr. A. C. Hunt.
 New York: Dr. H. M. Biggs and Dr. F. M. Meader.
 North Carolina: Dr. W. S. Rankin.
 North Dakota: Assistant Attorney General H. A. Bronson.
 Ohio: Dr. James G. Bauman.
 Oregon: Dr. David N. Roberg.
 Pennsylvania: Dr. Samuel G. Dixon, Dr. Wilmer R. Bolt, and Dr. John Odell Houser.
 Philippine Islands: Dr. Arlington Pond.
 Rhode Island: Dr. Gardner T. Swarts.
 South Carolina: Dr. James A. Hayne.
 South Dakota: Dr. Park B. Jenkins.
 Texas: Dr. H. G. Hall and Dr. F. B. Collins.
 Vermont: Dr. C. F. Dalton.
 Virginia: Dr. E. G. Williams.
 Washington: Dr. T. D. Tuttle.
 West Virginia: Dr. S. L. Jepson and Dr. W. T. Henshaw.
 Wisconsin: Dr. C. A. Harper and Dr. William F. Whyte.

REPRESENTATIVES OF U. S. PUBLIC HEALTH SERVICE.

Surg. Gen. Rupert Blue.
 Asst. Surgs. Gen. W. G. Stimpson, J. W. Kerr, W. C. Rucker, and J. W. Trask.
 Surgs. H. S. Cumming, L. L. Lumsden, G. W. McCoy, and B. S. Warren.
 Passed Asst. Surgs. H. S. Hasseltine and W. F. Draper.

GUESTS.

Dr. T. W. Crowder, director of department of sanitation of the Pullman Co.
 Dr. A. M. Parlett, medical officer, Baltimore & Ohio Railroad Co.
 Dr. A. E. Campbell, sanitarian, Illinois Central Railroad Co.

OPENING ADDRESS OF THE SURGEON GENERAL.

The SURGEON GENERAL. In calling to order this, the fifteenth annual conference of State and Territorial boards of health with the Public Health Service, it gives me pleasure to welcome so many delegates and guests.

As originally planned, the conference was to be held June 1 and 2; but on account of the disturbed international situation it was determined to advance the date of the conference to April 30. This was done after consulting with as many State¹ officers as possible.

By such an advancement of date and an early discussion of pertinent questions, it was thought that a clearer idea would be had of the effect on national health of the changed sanitary conditions arising out of the war. It was also thought that a consensus of opinion would be arrived at as to the broad lines to be followed in meeting these changed situations and the relation of the State health authorities to them.

It is the desire of all patriotic citizens in this time of stress to do their full part, and it is also the desire that the organizations to which we belong shall have opportunity to do their full part. In the case of the Public Health Service, the President is authorized by law to utilize it in any manner and to such extent as may seem best to him. Already certain officers of the Public Health Service are serving with the Navy at sea. Others are ready to minister to the sick and wounded that may arrive at the relief stations along the coast, and still others are doing medical and sanitary work in connection with interned aliens at immigration stations.

The bulk of the service operations, however, relates to the health of the country generally; and it is the desire not only to make these latter activities as beneficial as possible to the civil population, but to cause them to have a direct bearing on the successful waging of the war. As is well known, according to the law and the precedents, most of these activities are necessarily performed in cooperation with the State and local boards of health. The time seems opportune, therefore, for us to consider as never before the extent to which co-operation can go if necessary.

The attitude of the Public Health Service, as just stated, has hitherto been one of cooperation. In this time of national emergency, however, it is but reasonable to expect that greater accomplishments can be performed if all health authorities in their turn cooperate with the Federal authorities.

It is, of course, realized that no emergency will transfer any police power within a State to the Federal authorities. The whole idea

¹ Throughout this bulletin "State" will be used to include Territories and the District of Columbia.

of the need of cooperation is based on the thought that the changed sanitary conditions which may arise will affect the country as a whole and must be met from a national standpoint. At the same time, each State will to a greater or less extent have the same problems, and it seems desirable that they be met by the Federal, State, and local authorities acting in unison. This subject will be brought up for discussion later. Other important subjects will also be presented for discussion. It will not be necessary, therefore, to advert even to some of the more important activities which have engaged our attention since the last conference.

As each subject is brought forward for discussion, it is hoped that every delegate here will feel free to take part. As you are aware, the law authorizing these conferences provides that in matters requiring the ballot only one delegate from each State shall have the right to vote.

As in previous conferences, it seems advisable to have a resolutions or reference committee to receive and consider resolutions and draft others, if need be, to represent the final action of the conference on any particular subject. As members of this committee I will designate the following: Dr. H. M. Bracken, Dr. J. S. Pratt, Dr. E. G. Williams, Dr. W. L. Bierring, and Dr. J. W. Trask.

By request, the subject of the relation of Federal, State, and local health authorities to the protection of health in time of war was given a place on this program. On account of the importance of this subject, it seems to me that it should be received and considered by a special committee. As members of this committee I will designate the following gentlemen: Dr. H. M. Biggs, Dr. A. J. McLaughlin, Dr. J. S. Fulton, Dr. J. A. Hayne, and Dr. W. A. Sawyer.

The secretary will please call the roll by States.¹

Gentlemen, this is merely a provisional program. The reports of standing committees are given first; but it seems to me that, on account of the importance of the new business, the latter might be brought forward if the conference so desires.

Dr. RANKIN. I move that we do so.

(The motion was seconded and carried.)

CORRELATION OF FEDERAL, STATE, AND LOCAL HEALTH AGENCIES.

The SURGEON GENERAL. The program opens with the subject "The need of correlating Federal, State, and local health agencies for service in times of emergency." Dr. J. W. Kerr will open the discussion.

Dr. KERR. In anticipation of probable calls on the Public Health Service in connection with its relation with the States and Terri-

¹ The result of the roll call is given on pp. 11-12.

tories, rather extensive inquiries have been made into what are the problems that may confront us and what has been done in other countries which have already had this subject presented. As a means of opening the discussion I have prepared a rather extensive paper on the activities of the civil health authorities of Great Britain, these authorities being the representatives of the Local Government Board and the district, county, and municipal medical officers of health.

(Dr. Kerr then read extracts from the following paper:)

BRITISH CIVIL HEALTH ACTIVITIES IN RELATION TO THE WAR.

When England organized the territorial force, corresponding roughly to our National Guard, there was included in the plan a sanitary service, consisting of (a) sanitary companies and (b) sanitary officers available in case of war. The original idea was that the sanitary officers, who were generally medical officers of health, would be able to advise and direct the sanitary features of mobilization in their own localities. When the European war began, however, these officers, of whom there were then between one and two hundred, were retained with their divisions when these were moved to new locations, and, therefore, they did not serve as an organization for making the local knowledge of medical officers of health available for military purposes. It was cooperation between the medical departments of the Local Government Board (including medical officers of health) and the army which made this local sanitary knowledge available for military purposes. Further assistance from civil health bodies was afforded by the Scotland Local Government Board, medical societies in England, and a sanitary organization for the purpose in London. These will be considered briefly, but this paper is mainly concerned with those activities of the English Local Government Board which relate to the bearing of health on the war.¹

The medical department of this board forms the national public health service of England and exercises with the localities a joint authority, the medical officers of health being in the employ of both the Government and the localities. The board, therefore, has a more direct relation with local health than has the United States Public Health Service, and this fact, together with the fact that the Local Government Board exercises supervision over food for the army, makes its activities quite different from those which could be exercised by the Federal Health Service in the United States and also makes them of particular interest to an organization of State health authorities. The more limited space for encampments in England (resulting in the "billeting" of troops among the civilian population) and the sending to Europe of many army medical men with the expeditionary forces gave the civil health authorities a more urgent duty in the sanitation of troops than would be immediately true in the United States. Only brief mention is made of activities not likely to be exercised in this country by either Federal, State, or local health authorities.

Within a few months after the war started, the majority of the recruits in England were under the care of civilian medical men. Although the development of this cooperation was gradual, it appears well to give the Local Government Board's activities in their present form, which may be summarized as

¹ As circulars are issued by the Local Government Board, not by its medical officer, it can not be concluded that all of the subjects taken up are under the supervision of the medical officer.

follows: (1) Location of billets and camps and their sanitary inspection; (2) provision and maintenance of hospitals for troops stationed in England; (3) provision and inspection of food supplies for the army, both at home and abroad. These activities are carried out through an inspection service involving a majority of the personnel of the medical department, through the issuance of circulars prescribing steps to be taken by the local medical officers of health and through the work by the latter, who act largely in an advisory capacity to the local military authorities. All of this work is made possible through the cooperation of the war office, which directed that no billets or camps should be established without notifying the local civil health authorities, and that these officers when willing should be utilized in the sanitation of camps.

Financial arrangements made by war office.—The war office backed up its cooperation by undertaking to pay for additional work thrown upon the local health authorities, refunding the cost of scavenging in connection with premises occupied by troops (generally at an arranged rate based on the number of troops in occupation), the actual cost of special services, such as the erection of latrines and extension of water mains, and increased expenses resulting from the presence of troops (by a previous agreement between the military and civil authorities). The army funds, however, are not being used to pay for measures necessitated by the inadequacy of existing sanitary conditions even if aggravated by the presence of troops. Though designed to meet the case of troops in billets, these arrangements extend also to camps for troops and prisoners of war. Authority has further been given for the payment of generally not to exceed 6 shillings per day for soldiers sent to civil isolation hospitals. In its turn the Local Government Board has stated that it does not "consider it necessary or even desirable that all items of expenditure directly or indirectly resulting from sanitary services rendered to troops should be separately computed and made the subject of charges to military authorities," and that no necessary sanitary work should be postponed owing to a delay in fixing the amount of any charge.

Location of billets and camps.—It was early recognized that the medical officer of health alone could give the military authorities information as to whether a proposed camp site was dustless in summer or dry or damp in winter, as to what places should be avoided, as to the character of the population, the type and efficiency of the sewerage and drainage of a particular area, the character of the soil, and the facilities for obtaining water supplies and disposal of camp refuse, and prevalence of epidemics in the district. Orders were therefore issued by the home and war offices requiring consultation with the medical officers of health before the establishment of billets and camps. In the case of billeting, a telegram is sent in advance to the town or county medical officer of health appointing a time and place of meeting with the billeting officers sent in advance to arrange for the housing of troops, and a similar cooperation is required in the case of camps. The Local Government Board, in addition to directing local medical officers of health to give this sanitary information to the military or police authorities, directed these officers (1) to keep themselves in touch with the police in the district and (2) in case they learn from a nonofficial source that a camp or billet is to be established, to communicate immediately with the military sanitary officers and furnish them any sanitary information possible.

Sanitary inspection of camps and billets.—Inspection of the camps and billets by the district medical officers of health as to water supply, methods of disposal or removal of all solid and liquid refuse, general cleanliness, overcrowding, defective ventilation, and exposure to infection has supplemented advice as to location. Circulars issued by the Local Government Board give the specific

rules to be followed in such inspection. All billets are to be inspected at least once a week by the inspector of nuisances, who is to be furnished assistance where necessary by the district council. Small posts, guards at waterworks, bridges, etc., are not to be overlooked. Reports of insanitary conditions in camp or billet are made to the military authorities, to the householders, or to the contractors, as the case may be. If recommendations are made to a contractor or householder, he can be proceeded against, in case he does not correct the insanitary condition, for creating a nuisance.

Special advice to military sanitary authorities.—Outside of the routine inspection, the medical officers of health are directed to give information and assistance to the military sanitary authorities as to water supplies, disposal of refuse, drainage and conservancy arrangements, and control of infectious diseases, and all encouragement is given to the local authorities in taking up work in which they can be useful, such as extra scavenging, laying new water mains, etc.

Medical inspectors of the Local Government Board have assisted the district and county medical officers of health and the military authorities in solving problems as to the sewage disposal of camps and as to the protection of the water supplies of neighboring areas, a majority of the employees of the service carrying on inspection work or arranging details of expenditure in connection with work done by local sanitary authorities on behalf of military authorities.

Representations to military authorities.—Means for securing attention to recommendations made by medical officers of health are as follows: Minor matters are dealt with locally. More serious matters, if not satisfactorily settled by personal representations to the officer in command, are made the subject of a formal communication to the deputy director of medical services of the army, who forwards the communication to the war office. A copy is also sent to the Local Government Board by the medical officer of health.

Isolation hospital accommodation.—In October, 1914, the Local Government Board, on request of the war office, asked local authorities to supply information as to the number of beds (including medical, nursing, and other service) which they could furnish for cases of enteric fever occurring among the troops, and an arrangement was perfected by which the military authorities were given the use of these beds at a reasonable charge for this and other diseases. Where practicable, in the case of adjoining districts, each with its own isolation hospital, a "pooling" arrangement, which, for instance, would permit all scarlatina cases to be received in the wards of one hospital, thus making room for other infectious diseases in the other hospital, was adopted. Where it was found that there was insufficient accommodation in the civil isolation hospitals, the military authorities made arrangements with the local sanitary authorities for the erection by the local authorities of additional pavilions on the sites adjacent to the existing isolation hospitals at the expense of the military authorities. The war office provided that the pavilions should be of a temporary character, should be lined with asbestos or other fire-proof material, and should be provided with means of drainage, water supply, heating, and lighting. Most of these pavilions were copied from a design furnished by the war office and have two large wards of 10 beds each and two small one-bedded wards. A large number of the pavilions have been erected.

Internotification of infectious diseases.—From the second month of the war a system of internotification of infectious diseases between civil and military sanitary authorities has been in force in England. Each medical officer of health sends one copy of his weekly return of the number and nature of notified infectious diseases to the local military sanitary officer, the other going to the

Local Government Board. The war office issues for confidential use a weekly statement of the number of cases of various infectious diseases among troops in different commands and at each place within each command. The diseases upon which special emphasis is placed are typhus fever, enteric fever, paratyphoid fever, dysentery, and cerebrospinal meningitis. The Local Government Board's permanent records set out separately the number of infectious diseases occurring among the troops and among the civilian population.

When any patient convalescent from enteric fever, paratyphoid fever, or dysentery is sent on furlough, the medical officer of health of the place to which the man is going is notified.

On the arrival of convalescents from dysentery or typhoid fever in a particular area, notification is given by the military authorities to the civil authorities, and, where necessary, the civil authorities convoy these cases—that is, with nurses and the necessary hospital appliances, bedpans, etc.—to their homes or to the hospital to which they are going, so as not to sow the infection among the civil population. In certain cases the returning troops of this character are sent to special hospitals for care and treatment before going to their homes.

Another very important precaution instituted by the Local Government Board was free diagnostic clinics.

Control of infectious diseases.—Special mention must be made of the measures taken to control certain diseases.

Tuberculosis.—Attention has been given to the prevention of the enlistment of men with definite tuberculosis, the medical officers of health being required to supply the army council with lists containing the names and other particulars of all males on the tuberculosis notification register between the ages of 18 and 45 who had been notified during 1913–1916. Subsequent notifications are furnished within a week after entry.

Free treatment in residential institutions is secured by the Local Government Board or the insurance commission for all men discharged from the navy and army on account of tuberculosis who need and are willing to receive such treatment. Unless a tuberculous soldier discharged from the army or navy is transferred to a civil sanatorium or hospital, the medical officer of the military hospital notifies the medical officer of health of the district to which the soldier is to proceed. Thus the civil health authorities have knowledge as to where all tuberculous soldiers go after discharge.

Dysentery.—In view of the fact that dysentery originating in the field may easily be transferred to the civil population in England, the Local Government Board has cooperated with the army medical department (1) in taking every precaution in regard to the railway transport of dysenteric patients, including, so far as practicable, their isolation and disinfection of bedpans, urinals, etc., (2) in arranging that patients be sent only to a limited number of hospitals in England, in order to minimize the likelihood of spread of the disease. The medical inspectors of the board have also visited a large number of military and auxiliary hospitals, with a view to advising as to the special precautions required for dysentery patients.

In addition to the notification mentioned above as to dysenteric soldiers on furlough, the local medical officer of health is directed to ascertain whether any demobilized soldiers living in his district have suffered from dysentery during the war. The war office is cooperating in this work.

Enteric fever.—Cases of enteric fever are made the subject of joint inquiry by the military sanitary officer and the local medical officer of health, and to stimulate such inquiry the Local Government Board sends a query to the local health authorities for information concerning the first notified case of enteric fever in a district, and particularly as to whether the case was in any way related to military occupation. The military sanitary officers keep a special record of enteric fever among soldiers to insure that each case is made the subject of inquiry, to provide material for further inquiry where multiple cases occur, to compare the experience of various military units, and to enable a summary to be prepared of the experience of the army as a whole and of different parts of it.

Typhoid fever and smallpox.—Inoculation against typhoid fever and smallpox is not compulsory in the British Army and Navy; but the Local Government Board has drawn attention to the value of such inoculation and has directed medical officers of health to urge its importance.

Venereal diseases.—The enormous increase of military celibate life due to war rendered the control of venereal diseases exceptionally urgent and led the Local Government Board to issue detailed regulations providing for the making of diagnostic tests at the expense of the councils and for the adoption of a scheme by the councils which would insure free treatment at hospitals or other institutions of persons suffering from venereal diseases and under which medical practitioners could be supplied with salvarsan or its substitutes. Existing hospitals and clinics are utilized so far as practicable. The regulations are not concerned specifically with the military population, but are the result of a coordinated effort to provide free diagnosis and free treatment for venereal diseases during this time of stress in England and Wales.

Provision for convalescent soldiers.—The Local Government Board arranged with local authorities for taking care of convalescent soldiers, both those leaving hospitals in England and those returning from the field.¹

Free medical attendance for dependents of soldiers.—Soon after the war began, with the assistance of the members of the British Medical Association and the Pharmaceutical Society of Great Britain, a scheme for free medical attendance for dependents of soldiers was put into effect by the Local Government Board. Under the plan, doctors and chemists throughout the country volunteer to give medical attendance and supplies, the administration of the scheme being handled by different Government committees.

Disinfection.—A necessity for disinfection on a large scale of blankets and personal clothing from soldiers' camps and billets arose both from the occurrence of pediculosis and in connection with infection from acute diseases. The civil authorities supplement the disinfecting work conducted by the military authorities, sometimes doing this gratuitously and sometimes making a charge sufficient to cover expenses. Early in the war the Local Government Board directed that where no disinfecting apparatus existed in any district, the medical officers of health should if possible arrange for disinfection for the troops in neighboring districts. Thus, there was cooperation between districts as well as between the civil and military powers.

Utilization of laboratories.—In October, 1914, the Local Government Board directed that the assistance of county laboratories or laboratory arrangements be given where practicable to the military authorities. Rapid laboratory examination of material obtained from army cases suspicious of infectious diseases has therefore been possible. Furthermore, bacteriologists from county or district health services have at times gone to infected areas for the purpose of collecting specimens for laboratory diagnosis.

¹ See above under "Tuberculosis."

Supply of vaccine lymph.—Lymph for vaccination against smallpox is made by the British Government as well as by private firms. The war threw an unprecedented demand upon the Government lymph establishment, which has continued, however, to furnish the lymph required for naval and military purposes. In the fiscal year ended March 31, 1916, 1,176,231 tubes were furnished to the army and 77,493 to the Navy.

Prevention of overcrowded housing.—The Local Government Board does not appear to have been concerned with the sanitation of munition plants, which are under the control of the ministry of munitions. The board, however, has considered the problem of housing workers in those localities which have had an abnormal growth owing to the presence of munition plants—in part a health problem. Overcrowding in the case of huts and billets occupied by soldiers is prevented by a regulation of the military authorities, providing for 40 square feet per man. Inspection by medical officers of health, with reports of violation to the military authorities, has assisted in enforcing this regulation. The question of overcrowding has been of considerable importance owing to the prevalence of cerebrospinal meningitis.

Notification of births; maternal and child welfare.—The British Government has combated the fall in the birth rate and the rise in infant mortality which accompanied the war (1) by making the compulsory notification of births act (1907) universal, (2) by giving county councils authority to appoint health visitors and to provide maternity and infant welfare centers,¹ and (3) by more active work on the part of the Local Government Board in maternity and child welfare work.

Protection of food supplies.—As stated at the beginning of this paper, one of the most important activities of the Local Government Board in regard to the war was the protection of food supplies for the troops, both in England and in the field. The board's inspectors of foods were placed at the disposal of the war office and at its request the board organized an inspection service for the food furnished the army. In this local medical officers of health cooperated by inspection of the premises of local contractors for army food and beverages. The subject is treated only in brief, since in the United States a similar duty is not likely to be given to the Public Health Service or other health authority.

Service in the army medical corps by public health officers.—At the beginning of the war a large number of medical officers of health, with the consent of their councils and of the Local Government Board, took temporary commissions in the royal army medical corps. In addition a large number of medical men holding other posts under county councils and sanitary authorities have also given their services to the army. Reference to the sanitary service of the territorial force has already been made. Later it became necessary to get some of these experts back, and this applies also to technicians and experts who could serve their country better at home than abroad.

Preservation of efficiency of health service in spite of diminished force.—Although this cooperation was encouraged by the Local Government Board, it was realized that steps must be taken to preserve the efficiency of the civilian sanitary service. The board therefore directed (1) that all vacancies in the minor sanitary staff should be filled up; and (2) that some steps should be taken to combine the duties of district and county medical officers of health, tuberculosis officers, etc., in order to leave no gaps where certain of these officers had departed for military duty.

Cooperation with naval authorities.—At the request of the admiralty, the Local Government Board and the local civil health authorities have acted in cooperation with naval medical authorities in a similar manner to that carried

¹ Provided for in the notification of births act.

out with the medical authorities of the army, in so far as naval camps, depots, or billets on shore are concerned.

Sanitary organization in London for assisting military forces.—As an example of activities by bodies other than the Local Government Board, it appears well to mention the cooperation established in London between the civil and military sanitary authorities. The medical officers of the various metropolitan boroughs, each of whom is responsible for the general sanitary arrangements of the troops within his area, are in immediate communication with the commanding officers of these troops, and suggest sanitary improvements to them. These officers report at regular intervals to the headquarters of the district. They inspect the accommodations for the troops, the supply of food, its cooking, the feeding arrangements generally, latrines, urinals, means of washing, and the removal of refuse.¹

Scotland Local Government Board.—Mention should also be made of the Scotland Local Government Board, which operates independently of the English Local Government Board. In general the cooperation established parallels that of the latter.

Success of cooperation.—The success of the cooperation above described between the civil and military sanitary authorities of England would seem to be indicated by the fact that, according to the statistics of the Local Government Board, communicable diseases, with the exception of measles, have not shown any increase during the war.

I thought that it might be worth while to put this statement into the record, because it shows in a very rough way what the problems of the civil health authorities of Great Britain have been and how they have been met. By law the Public Health Service has an intimate relation with State and local authorities. Such law, of course, very clearly defines the limits of our powers, but it also recognizes the idea of cooperation. All authority exercised by the Federal Government was originally detailed to it by the several States. It would be entirely impossible, therefore, for the Public Health Service to assume the duties within a State that properly devolve on State and local health authorities. On the other hand, the first law relating to health (1796) required Federal officers to cooperate with State and local health officers in their measures of protection, and this provision has been repeated many times in subsequent laws.

The division of labor therefore depends, as you well know, upon the State boundaries. Within the States the Federal Government, of course, has no authority. In interstate matters it has authority, but has been slower in choosing to exercise this authority in interstate health matters than in many other activities, such as the control of interstate commerce. The law has provided in respect to many interstate health activities that the Federal Government or the Federal Public Health Service shall act, by direction of the President, only when the States fail or refuse to take steps against contagious or infectious disease which may jeopardize the country as a whole.

¹ Authority for this section is an editorial in the British Medical Journal.

In accordance with this policy the service for years has carried on all of its work in cooperation with the States. In fact, in the investigations which could be carried on independently the aid of the States has been welcomed.

I mention these matters because it seems to me that all of us should have a clear understanding at the outset that, whether we want to or not, we can not assume each other's functions except in a spirit of cooperation, and, as I take it, the object of the advancement of the date of this meeting was for us to take a census, as it were, of the broader problems that may confront us and of how they may be met.

Dr. BIGGS. Mr. Chairman, it goes without saying, I think, that the State and local health authorities throughout the country want to do everything possible to assist the Federal authorities in the emergency which now confronts us. It seems to me that if the Public Health Service could do two things it would help the situation very much: First, define what, in the opinion of the Surgeon General, the State and local authorities can do to assist him in his work; second, what assistance the Public Health Service can offer the State authorities and the local authorities in the demands that may come upon them.

I think that it is only a question of defining exactly what each of us can do. There can be no question about the readiness of cooperation on the part of local and State authorities in anything that the Public Health Service wishes or requires.

The SURGEON GENERAL. I will state, in reply to Dr. Biggs, that the bureau has formulated no plan for the correlation of Federal, State, and local health agencies and that I should state, in justice to others, that the idea did not originate with us. It occurred to several gentlemen that the present emergency afforded an excellent opportunity for the correlation of these health agencies. While I am in hearty accord with the suggestion, it does not appear altogether clear to me as yet just how a closer cooperation can be brought about. I am sure, however, that if it meets with your approval a plan can be evolved.

Dr. PARLETT. It occurs to me that the Public Health Service might make very good use of the medical staff of the railroads, especially in the movement of troops and the inspection of camps, water supply, protection of watersheds, vaccination, and innumerable other things these men can do from a sanitary standpoint.

Dr. RANKIN. Mr. Chairman, I should like the chairman to define what is meant by the term "Federal health agencies."

The SURGEON GENERAL. It refers mainly to the Public Health Service.

Dr. E. G. WILLIAMS. I suggest that we take up the rest of the program in order to give the committee of which Dr. Biggs is chairman an opportunity to prepare a report.

Dr. HAYNE. Mr. Chairman, as a member of that committee, I will state that we have formulated certain resolutions, etc., but that we wish to have an expression of opinion before formally adopting them. It seems to me that this is an extremely important matter, and that, instead of passing it over to the committee immediately, the conference should discuss the tentative resolutions and approve them or tear them to pieces.

Dr. KELLEY. As president of the conference of State and provincial boards, Dr. Tuttle has suggested that it might be well for us to have a free discussion this morning, but to take no formal action until the States, acting independently, could prepare resolutions to submit to you, Mr. Chairman, as the joint opinion of the States. With that end in view he asked me to announce that we would like to call a meeting of the State health authorities this evening at 8 o'clock at the New Willard Hotel. It goes without saying that the Surgeon General and all other representatives of the service are most cordially invited, and we hope not only that they will be there but that Dr. Martin and Dr. Stimpson, of the Council of National Defense will also be there to define for us their ideas of where State health officials can best fit into a national policy in sanitary matters.

I see no reason why we should not find out this morning what everybody's ideas are on the subject.

Dr. JEPSON. I presume that there is not a State in this Union today which would hesitate for a moment to throw all the influence of its health department with this bureau to bring about the very best results in this national crisis. In West Virginia—I do not know that you will ever come so far into the interior—we have already collected data as to the hospital and laboratory facilities of the State. I have those in my pocket, and shall be glad to turn them over to the proper authority if they will be of any benefit.

Dr. SAWYER. Mr. Chairman, in order to place the discussion upon a more specific basis, I should like to state why we in California feel that it is high time that there was a more definite organization of the people involved in sanitation, or those who will be involved in sanitation, during the coming war.

At the present time we are receiving questionnaires from dozens of sources. We are organizing without a leader, and we know it. We have no confidence in the people who are giving us advice. We can not go to our legislature and ask for money, because we can not tell them specifically what we want. The most we can do is to realize that probably sometime some national organization—either the Army

or the Public Health Service—will ask us for help, and we hope that they will soon make up their minds as to what they want.

Now we feel that we would rather work under the Public Health Service and have them represent us here in Washington than under any other service which is not so intimately connected, familiar, and sympathetic with State health work; but we wish to have the matter settled so that orders will come from one headquarters, except when that headquarters, for reasons of expediency, informs us that we will be called upon by other military or public-health authorities.

At the present time the confusion is shown largely by the members in our different departments—and this is true not only of California—who are being called upon to enlist in the Officers' Reserve Corps. and who are restless, who feel that perhaps they will not be serving their country if they remain with the State board of health. They do not know whether the State board of health will have any definite relation to the Government in this war. They will stay if they can be shown that they will serve their country best by staying.

I think it is only just to these young men that some one here in Washington should tell them: "The place for you to serve is in the State board of health, at least until you are called for service elsewhere." I do not believe that we, as State officers or municipal officers, can tell them authoritatively where their best service is. We are interested parties. But I believe that the Nation can tell them where not to serve, and also can tell them where they can serve best.

That is already being done by the Army in connection with some of their recruiting. For instance, the cadets at the University of California have been notified not to enlist and the enlistment authorities have been notified to accept no more of them. The War Department wants these cadets for officers in an army yet to be recruited.

I think the same thing holds true with our sanitary policy. We should be told where we are needed. If the State boards of health and the local boards of health are to be broken up, the men going into the Army and the Army controlling sanitation through a large part of our State territory, then we should know that, so that we may stop trying to hold our men back. If, on the other hand, the machinery which we have gradually created through the years is the best machinery for the Government service, I think we should also be told that in terms which can not be misunderstood. It would be a great satisfaction to lots of loyal Americans who are engaged in sanitary work.

In closing, I want to say that in California we are willing to enter into almost any kind of agreement which will increase our efficiency. We do not care much how definitely centralized it is or how much we may have to efface ourselves in this matter. We want to get results, and we want to be a part of an efficient machine that we

can be proud of. Now, to do that it is probably not necessary to remove any question of the rights of the individual States or to settle any question of the relative rights of the States and the Government in this matter, because we are willing voluntarily to accept suggestions, or orders, if you please, and to carry them out just as if we had a centralized public-health government.

Dr. McCORMACK. Mr. Chairman and gentlemen, it is with the idea of presenting something practical along the line of Dr. Sawyer's talk that I should like to give you a little of my own personal experience. I do so with no purpose of destructive criticism, but simply because I believe that the opportunity offered to the State authorities at the present time is a very great one.

I am a member of the Medical Reserve Corps, and as such last year, when the troops were ordered to the Mexican border, I was directed to report to Fort Thomas to help in the examination of recruits. The sanitary officer in charge at Fort Thomas was a surgeon who had paid as little attention to the subject of sanitation as I had to that to which I was assigned—examining recruits' hearts, a thing I had not done to any extent since I was graduated.

The water at Fort Thomas came from a public water supply which was very bad. It required immediate attention. No arrangements could be made with the military authorities, however, for the Army was being mobilized too rapidly. I found the line officers of the Army ready and willing to accept sanitary suggestions from anyone who would give them, providing the advice was definite; but the very efficient medical men at the fort had time only to inoculate the troops against typhoid fever, vaccinate them against smallpox, and examine recruits. I do not think I have ever known a better doctor nor a more efficient man than the major surgeon from the Medical Corps who was in command at Fort Thomas. But there were 4,200 recruits there. Sixteen hundred of them were rejected after physical examination. The major surgeon had to sign his name, I take it, somewhere between 40,000 and 70,000 times, and he did not have time to do anything else. As a result of these conditions, the State board of health had to take charge of the water supply, furnish the sanitary force necessary, and pay for the work out of an inadequate appropriation.

As is to be expected in all disorganized or organizing communities or camps, the latrines at Fort Thomas were bad, and their care was bad. The correction of that condition was also attempted, but the officers informed us that the troops were needed at the border immediately. They did not have time to pay attention to the insanitary condition, and I found that as an officer of the Medical Reserve Corps I had neither influence nor standing. By telegraphing to the Acting Surgeon General of the Army, through the State board of health,

I was able to get orders from the Quartermaster General that the tents, the mess tents, and kitchens should be screened. The screening material arrived a few days after the troops left for the border and did not get to the border before they got back.

Now, I hope you will feel, as I feel, that I am in no sense critical of the Medical Department of the Army. I think it is one of the greatest organizations, not only in this country but in the world. On the day that our troops arrived at Fort Thomas there was sufficient typhoid lymph to inoculate every soldier. The arrangements were complete. The troops were inoculated, and effectively, and on the second day after they arrived every one of them was also vaccinated in three places on the arm, as required by law in Kentucky. But unless some action is going to be taken by this body or some other authority—I believe it should be taken by the Public Health Service—there will not be satisfactory results. I do not believe there is a doctor or sanitarian worth his salt who is not ready to enlist and to give you, sir, and the President and the country through you, the same loyal and faithful service that he would if he were enlisted and sworn into the Army. We are just as ready to obey your commands or your suggestions—and your suggestions are commands to us in a fight like this—as though we were sworn into the service, and we can make our work effective because we have the local police authority to do it.

Without such correlation a sanitarian will eventually be fitted into the groove for which he is best qualified, but in the meantime he is likely to be assigned to the examination of recruits. I have already received an order directing me to report to Fort Thomas for such duty. Although I am a surgeon, I am first a sanitarian. I believe I can be of best service to my country as such. As one of the youngest and least qualified doctors of this distinguished body, I know that 99 per cent of you can be of best service as sanitarians and that your services and those of your laboratories and laboratory experts should be utilized in that field.

Although the soldiers were all inoculated at Fort Thomas, no defenses were thrown around the civilian population near the fort, and in the civilian population we have at least a residuary interest. It is just as important to us to protect our citizens from unnecessary preventable diseases resulting from concentration in these hastily formed camps as it is that we should protect our soldiers from them.

While we are laying the foundation for this correlation of public health services, let us make it so broad and so wide that in the future, when an emergency arises, in war time or not, the State health organizations will be sufficiently federalized to carry out orders issued by the Surgeon General. Then, for instance, it would be impossible in Kentucky to have 1,600 out of 4,200 recruits re-

jected, the vast majority being disabled by conditions which were entirely preventable, and which would have been remedied had we been doing our work thoroughly. Let us have, throughout the entire country, federalized and correlated, a health service that will reach down into every home; that will be local in so far as necessary; that will be directed by State authorities where demanded by the varying conditions; that will be controlled and correlated by this great strategical board here in Washington, presided over by the Surgeon General of this distinguished service; and that will have the assistance all the time of the whole force that makes up the service.

Dr. FULTON. Mr. Chairman, I am encouraged by Dr. McCormack's remarks to say a word or two as to what might have happened in Maryland and what might still happen, assuming that the plan outlined by this committee might by any means fail of accomplishment.

Last summer I lost one of my important deputy State health officers to the Federal Government. That loss set me to thinking very actively about the consequences which would ensue if a national state of war should arise. As a result, the following plan, which was under consideration before the subject under discussion here had occurred, so far as I know, to anyone, was developed:

It was our plan to make a complete accounting of the personnel of the whole State board of health, including women, to the governor of the State for purposes of national defense, and to ask the governor to make a tender of that whole sanitary unit to the Federal Government. That plan has not, as yet, been fully carried out; but what was anticipated in considering a proposition of that sort? I lost my single deputy State health officer because he was a member of the Maryland National Guard. I have three members of the Medical Officers' Reserve Corps. One of them—myself—has been a medical officer of the Reserve Corps for 10 years. There never has been such a thing in connection with the United States Public Health Service at any time, nor did it seem likely that there was going to be such a thing until the recent Executive order was issued, and it became possible to have a reserve corps of officers for the United States Public Health Service. Therefore, this matter was discussed, not with the Public Health Service, but with the Surgeon General of the Army in an informal way. It has not yet become official.

Now, if there had been no Public Health Service, or if, having a Public Health Service, it had remained in a state of inability to create for itself a medical reserve corps, there is at least some probability or possibility that the Army Medical Department might have availed itself of our forces as a sanitary unit. The matter has gone so far as to bring about consultations at the office of the Surgeon General of the Army. At his office we learned a good many things that were not said in words. For instance, we found that they were

extremely and intensely preoccupied with the examination of recruits. In getting up a large Army they wanted an enormous number of men to examine recruits. Nothing could be more ridiculous than to send me to examine recruits. I was afraid they might send me, and the worst of it would be that they would not know that a totally unqualified man had been making the examinations. Then they might send Chesley down from St. Paul to do some equally foolish thing. In other words, the Medical Department of the Army has no way of applying critical methods to the medical quality of a State department of health.

I do not think they have given much thought to sanitary engineers, and yet we have in all our departments of health, or a good many of them, squads of persons who are available for very diversified functions. This matter now presents itself to me, therefore, in a very much more encouraging light, and I am mighty glad that the governor of Maryland has not so far tendered our unit to the service of the National Government, because now, if the good plan goes through, one can make a proposition which is definite and clear and which does preserve our functions.

One thing which confronts a man who goes to the Medical Bureau of the Army at this time should give pause to a sanitarian. One finds that one is sworn in for the term of the war, or, as they say, until the conclusion of the present emergency. It is not possible for the Medical Department of the Army to detail men for service within their own States or in closely adjacent territory for short terms at a small expense. It certainly appears to me that in a very short time I should lose valuable men to do the perfectly unimportant thing, from my viewpoint, of examining recruits.

Another thing I found was this: That the Surgeon General of the Army would be in absolute command in that way, to take persons out one at a time and send them for any sort of duty without consultation. At once the question was raised, Could a State department of health knowingly and willingly consent to an arrangement of that sort? I should have very great objection to that sort of arrangement.

I have not the slightest hesitation in saying, however, that there is no reluctance whatever in the State of Maryland in regard to co-operating with the Public Health Service. If the time should come when the question of authority in this emergency now confronting us is to be answered by the State of Maryland, I feel quite sure that its department of health will, without the slightest reservation, say that the Surgeon General of the United States Public Health Service is in command of our department for the period of the war.

The SURGEON GENERAL. I will state, for the information of delegates, there is under consideration a bill for the creation of a sanitary

reserve to work with and under the ægis of the Public Health Service in times of emergency. In my opinion, the membership of this organization should not be confined to medical graduates, but should include sanitary engineers, sanitary chemists, sanitary bacteriologists, and others interested in this important subject. I will ask Dr. Rucker to explain the plan to you.

Dr. RUCKER. Mr. Chairman and gentlemen, I think that perhaps all of us do not realize exactly what a serious situation confronts the United States at the present time. I think we must realize that this is no 90-day war; that we have entered the most serious war in which our country has ever been engaged, a war which will not only mean a great disturbance in the sanitary balance at home but which will mean the sending of troops abroad, there to be exposed to the infections of all the peoples of the world. Every nation and every people in the world are represented on the western front in France. For nearly three years they have been living under trench conditions. There has been an ample opportunity for the interchange of many hitherto unrecognized infections which may eventually be brought back to this country.

Then we have the question of raising two million men. That means the movement of at least two and a half million men for greater or less distances up and down this country. These people, coming in contact with each other, may contract diseases or become disease carriers and, when returned to civil life, may act as foci for the distribution of these infections.

Moreover, the withdrawal of two and a half million men from production, mostly of the necessities of life, and the raising of a vast industrial army will disturb the balance of nutrition in this country. The increase in wages and decrease in unemployment will assist in combating serious sanitary conditions; but it is evident that we have in this country three problems to meet:

The first is the distinctly military problem, to which everything else must give precedence. We must realize that the safety of civilization depends upon our winning this war. Therefore, military necessity must come first. The sanitation of military camps, the protection of the health of the men who are drawn from civil life, is a problem that the military authorities must work out largely for themselves, but in certain instances they may be assisted by the civilian health agencies.

Next, we have the problem of the protection of the civilian population, a great intensification of the problem which confronts all of us every day.

Last of all is the problem of the twilight zone where the military and civilian populations overlap, with consequent opportunity for the interchange of infection.

In regard to the military problem, I think we may take it as axiomatic that there should be no dissipation of the sanitary forces of this country. If sanitarians are to go with troops, an endeavor should be made—and I do not know of a body of men who could do it better than the State health officers—to see that those men are put into positions where their sanitary knowledge can be used—in other words, that sanitary pegs are not put into medical and surgical holes.

How many men should be permitted to go into the military services? I think we may take it as a fundamental that under no circumstances should civilian sanitary service be made an excuse for avoiding military service. We can not put ourselves on record as being slackers. If the necessity arises, every man who is of military age and physically fit must go with the colors; and while he should try to secure sanitary service with the colors, he must go, whether he wants to go or not, in whatever capacity he is sent for.

But the experience of England has been that these men must very frequently be called back. For instance, Col. Goodwin told me that at the beginning of the war a great many men in their third, fourth, or fifth years in the medical schools took commissions in the combatant forces. Not having been graduated, they could not take commissions in the medical forces. There was such a dearth of medical material that it was found necessary to recall these men from the combatant forces, let them finish their medical schooling, and then commission them in the medical corps.

In the course of its deliberations, I believe, this body should take some steps looking to the protection of the practices of those sanitarians who enter the military services. If a man has a sanitary position with a State or local government, I think that when he returns from the war he should have his place back again and that those who stay at home should see that his place is held for him.

Frequently a man will go at a lower rate of pay than he is getting at home. That means that the man's family must be subject to a certain amount of deprivation. I think this body should undertake to make arrangements whereby the municipality or the State will make up to that man what he has lost in the way of pay during his absence with the colors.

The strictly civilian part, as I have indicated, is merely an expansion and an intensification of the work which we are already doing; but in that work I think there should be a coordination with the Federal Government. All of the utilities of the Public Health Service should be made use of along as many lines as possible; for example, the survey of watersheds which are to supply military communities or near-by civilian communities; the building of isolation camps; the control of communicable diseases as they arise; the wholesale inoculation of the general public against smallpox, typhoid

fever, and paratyphoid "a" and "b," and in certain situations against dysentery; the carrying on of antimosquito work and similar activities, particularly with reference to the question of the protection of troops.

Furthermore, I think that an intensive campaign aimed particularly at the education of males of military age in sanitary matters should be carried on. As you know, the plan is to mobilize a million men in the next 12 months and later another million. If we inaugurate a definite plan of sanitary education, particularly with regard to personal hygiene, a good many of these men will have had their training before they are called to the colors.

As to the zone which is intermediate between the civilian population and the military population, it seems to me that the coordinating machinery should be the Public Health Service, which can do both military duty and civil duty, and is therefore the coordinating force par excellence. It seems to me that the way to meet this problem is by the formation of a reserve which may be called into action at any time by the Surgeon General. Under such a plan, if there is an epidemic of a communicable disease in a given State, and the State desires the Federal Government to undertake the eradication of the disease, the State health officer and his entire force may, if they are in the reserve, become for the time being a part of the Public Health Service. When the emergency has ceased they can be placed back on the passive list. There has been no interference with the police powers of the State. All of the work has been done under the delegated authority of the State, and done by the man who must keep up the barriers after they have been erected. In that way there is no disturbance of the balance of power, nor has the Public Health Service assumed any power excepting that which has been given it. If the State does not desire to give such power, it may handle the situation itself, or the Public Health Service may handle it from the borders of a contiguous State. I believe that by having an interlocking scheme of this sort there will be a closer official harmony between the Government and the States. Of course, the personal harmony has always been there. There has been very little question about this matter heretofore, but now we have arrived at a point where all the forces of the Nation, State and local and municipal, must unite for the purpose of keeping the American people absolutely efficient in a sanitary way in order that we may win this war, upon which civilization is absolutely dependent.

Dr. DIXON. Mr. Chairman, as the representative of Pennsylvania, I want to say that that Commonwealth is in hearty sympathy with everything that Dr. Rucker has uttered. Our colleague from Kentucky suggested possibly an ideal theory of centralization. To centralize the power would require the changing of the Constitution—a

tedious thing to do. As has been said here this morning, and as we all individually know, whatever is done must be done at once. I hope the committee that has been appointed by our chairman will consider the necessity of immediate action and of doing that which is practical, and will ask us all to aid in giving strength to the Public Health Service to cooperate with the States, to the end that they may use their police force and the appropriations that have been made by law as nearly in accordance with the advice of the Public Health Service as possible.

Dr. HAYNE. Mr. Chairman, I think that we should know what authority has been delegated to the representatives of the States. I presume that most of them have at least presented the situation to their boards of health. I may state for South Carolina that I was empowered by the governor, the attorney general, and the South Carolina Medical Association—which is the State board of health—to take any steps which the United States Public Health Service should suggest toward federalizing our board of health. We are willing and pledged to do anything that we are called upon to do; but the plans have to be worked out, for at present we are in a chaotic condition.

I myself am a Medical Reserve officer. I had the same experience last summer that Dr. McCormack had. I found that the State board of health was not consulted in regard to the camps, and that the military authorities did not take any care of the civilian population. As a concrete instance, they condemned the water supply of the camp in South Carolina and ordered the soldiers to use boiled water; but thousands of civilians visited the camps, and were not given boiled water but were given the tap water which had been condemned for the soldiers. Conditions like that will continue to exist until the State boards of health have some authority delegated to them by the governor.

Dr. SWARTS. Mr. Chairman, Rhode Island has quite an important naval base and has good locations for internment and refugee camps. We have therefore become quite interested as a board of health in the question as to what is to become of our civil population in connection with the invasion of a large number of irresponsible soldiers and surgeons, some of whom have no knowledge of sanitation.

Upon the mobilization of troops to go to the Mexican border the State board of health immediately visited the camp in a friendly way. It was found that the water supply would give out in a very short time unless a supplementary supply were obtained, and that the privy vaults and latrines were entirely exposed to flies, etc. The surgeons who examined soldiers and cared for the routine of the camp had little time and perhaps very little authority to remedy these conditions. Therefore the board of health suggested what

alterations were advisable for sanitary reasons, and they were made at once. At present we are going to have that same condition in a more extensive form. Moreover, with every camp there will come the camp followers, establishing their huckster carts and other institutions of which we do not wish to speak and which are going to influence our civil population.

Suppose, now, that we have an outbreak of some of the diseases of which Dr. Rucker speaks, diseases which have previously not been prevalent in this country. Take typhus fever, for instance, which has spread broadcast throughout the armies on the western and eastern fronts. With the interchange of civilians and soldiers, typhus, once started without being recognized by the military authorities, would become a serious problem. I think the Federal, State, and municipal health authorities should determine what precautions the civilian population should observe.

Suppose, again, that a camp is located at the northern end of a certain lake extending from Rhode Island into Massachusetts, and suppose that the State of Massachusetts is not alive to the dangers of contaminating that lake, at the southern end of which we have a large sanatorium for tuberculosis, using the water for drinking purposes. We could not go into the State of Massachusetts and demand that no contamination of that water supply should take place, but it would be possible to call upon the Federal authorities to prevent the bringing of contaminated water from Massachusetts, either by natural means or otherwise, into the State of Rhode Island. It will be readily seen that a situation of that sort might arise between two States where one did not exercise proper control of sanitary matters.

The question of tuberculosis has come up recently with increased emphasis. A minister returning recently from the front described the conditions in regard to this disease as being very startling. Owing to imperfect examination of the heart and the lungs, there have been introduced into the Army large numbers of tuberculous patients. Aggravated by conditions at the front, the disease is spreading rapidly, especially in internment and prison camps. Men returning from the Army with tuberculosis will spread it through our civil population. It seems quite proper that those who have knowledge of sanitary matters and methods for the control of the spread of infectious and contagious diseases should be given an opportunity to assist in meeting this problem.

The need for cooperation between Federal, State, and local health authorities could be shown by further instances. Coming from Lake Erie to Rhode Island, about 250 of our soldiers or civilians were taken sick with paratyphoid fever. It was necessary for us to call

upon the Federal service for assistance, because they had authority outside of our borders. They gave assistance not only willingly, but so thoroughly that the spread of the disease was prevented. I might also refer to the poliomyelitis situation. The service that the Federal health authorities did for us in New York and Rhode Island, especially in connection with the departure of suspects, was of great value.

Sanitary problems of this kind will be frequent when the military plans begin to be carried out, and I doubt very much if there is any State, which needs assistance, but what would receive it, and be glad to receive it. In the case of those States which are thoroughly equipped and organized in health matters, the assistance of the Federal Health Service might not be needed.

Dr. FRANTZ. Mr. Chairman, we are at war. Each individual State is a unit of a great whole, and I feel that it is the duty, the moral duty, the war duty, the man duty, the self-protection duty of every health authority in the United States to lend its unqualified support to the furtherance of everything which will promote the health of the soldiers, of the good officers who are in charge, and of the people of the United States.

No one State can defeat Germany. No one State can dictate, or should think for a moment of dictating, to another State, nor to the United States, the policy to be pursued in maintaining healthful conditions for the Army and Navy which are to be produced in this country.

Delaware extends to the properly delegated authorities its assurance of unqualified support of any measures which will further the aims and purposes of our part in the sad conflict. If an army is sent through Delaware, or encamped there, we may expect the United States to finance that part of the program which we as a State are not able to finance, but we will have sanitary rules and regulations which will prevent the spread of contagious diseases. We feel confident that the Public Health Service will also meet the conditions that may arise. These conditions are different from those arising in times of peace, and some of the rules of the Public Health Service may not exactly correlate with the laws of our State; but they will be national rules or laws, passed to meet an emergency, and we will accept them.

As I said before, we will lend the national authorities all the facilities which Delaware has, and I know and feel that every State in the Union will do the same. We respectfully ask you to tell us what we shall do, and then it will be our duty to do it.

Dr. RANKIN. Mr. Chairman, it seems to me that there are certain things suggested by the topic under discussion with which we all agree. North Carolina has never asked anything of the Public

Health Service that she did not receive. There has been perfect cooperation in the past, so far as the Public Health Service is concerned with my State, and if there has not been perfect cooperation on the part of my State, it is simply because of lack of means. However, I do not recall any request made by the Public Health Service which was ever turned down by North Carolina. I think the cooperation between the States and the Public Health Service in the past has been pretty good, and I should be glad to have the committee charged with the heavy responsibility of making a report on this subject make a distinction between the cooperation to exist between the States and the Federal Health Service in the future and the cooperation that has existed in the past.

I think, gentlemen, that the real question which we are here to decide is what Federal agency is to direct our health work in this emergency. We want to know who represents Uncle Sam in this matter. I hope that the Surgeon General of the United States Public Health Service will be designated as such representative, and that all the State boards can take their orders from him. But that, as I take it, is a matter for the Council of National Defense to pass upon. If they say that Surgeon General Blue represents the Nation in this matter, then the Surgeon General will be our commander in chief, and his authority will not be questioned; but if they do not say that to us, and if the Surgeons General of the Army and Navy keep coming to us and asking us to volunteer our services on the ground that they are needed in those departments, we will be in the same confused state of mind that we are to-day. Those of us who have advocated this war with Germany—and I hope all of us have—are embarrassed because we do not know to whom to volunteer.

So it seems to me that the work which the committee has before it is to find out if the Surgeon General of the United States Public Health Service represents the Council of National Defense. If he does not, the committee should submit to the council a proposition which will show that we, as an organized body, can serve better than in our separate capacities, and which will persuade the council to designate the Surgeon General of the Public Health Service as our commander in chief in this matter.

Dr. CRUMBINE. I think that Dr. Rankin has put his finger on the very point we wish to decide. The reason I think so is because of an experience I had a week ago when requested by the medical officer at Fort Leavenworth to consider with him the so-called twilight zone that Dr. Rucker spoke of around that fort and in the city of Leavenworth. The medical officer was anxious that the zone around the fort should be properly safeguarded preceding the concentration of troops, and therefore he called on the State authorities.

There is another great military reservation camp in Kansas, Fort Riley, where already the officers in training are being concentrated. Nothing is being done there in regard to this twilight zone.

Dr. Rankin has very clearly pointed out that we ought to know very soon with whom we are working and by whom we shall be directed. We ought to get together quickly so that we can go ahead with this plan of cooperation, utilizing what authority we may have in the States and depending for additional authority upon cooperation with the Federal Government. Our experience with the Public Health Service has been so splendid that I called my associates together and we took an inventory of our work and our personnel to find out what we could offer you, sir, at this conference. The plan has been approved by the State board of health and has been signed by the governor.

Dr. DOWLING. The governor of Louisiana is in hearty accord with this movement, having been an officer in the Spanish-American War; and while he is absent from the State at present, and I have nothing official from him, I know our action will have his approval, and I will say that Louisiana stands ready to cooperate with you in every way possible and to the best of our ability.

I, like some of the other members, am an officer of the Reserve Corps, and I have already received a request to know when I could report if called out. I visited some camps in Louisiana a year ago and had an occasion to cooperate with the Public Health Service with respect to the examination of the water. All the water supplies of the various camps and surrounding areas were condemned, every condemned place being posted with large red signs. That resulted in a pipe line from an insane asylum which was 2 or 3 miles distant and an appropriation by the legislature for the sinking of a deep well. The camps recently established were on one of the fair grounds and one of the city parks, and they have been supplied with a water supply from the city and with shower baths and sewage disposal systems. The work is progressing rapidly there, and I am sure that it will be as satisfactory as possible.

I would like to hear from every one of our membership on this question. I will only repeat that Louisiana will cooperate with you in every way possible.

Dr. TUTTLE. Mr. Chairman, Washington has no fear of cooperation with the United States Public Health Service. We have been cooperating with them for some time. Like the people in Dr. Rankin's State, however, we want to know who is to be designated by the Government to direct us.

Washington wants to win this war, and the United States is going to win it; but there are some of us who are not able to perform military service. I was examined for the Reserve Corps, and they

found that I did not need a dentist. I had had him too often before. So I can not be in the Reserve Corps. At a high school in our State in which the whole senior class enlisted, there was one boy who could not pass the physical examination. He said, "I am going to enlist, anyway; I am going to enlist on the farm." Early in this little disagreement one of the presidents, I think, of an eastern college came back from Europe and said, "The fight will be won by the nation that can feed its troops longest." I believe that is true. We must feed our troops, but to do that we must keep healthy the men who, under the same flag and in the same battle as our soldiers, will furnish the food, the funds, and the machinery to carry on that battle, and we must keep them in good health not only during an epidemic but all the time. The importance of that work is something that should be brought to the attention of the Council of National Defense. I believe they have overlooked it.

Dr. DRAKE. Mr. Chairman, a year ago Illinois had an expensive experience in the matter of the sanitation of mobilization camps. The governor requested the board of health to look after the sanitary conditions surrounding the camps. We were perfectly willing to undertake that work and began it; but we soon found ourselves in the very embarrassing situation of being on a military reservation without any real, definite authority. I think such a situation may well be avoided by the plan suggested here. I am thoroughly of the opinion that there should be established in the service of this country a sanitary unit.

It has been my experience that the average physician attached to the medical services of the various regiments is not qualified to look after the sanitary requirements of the camp. Very recently mobilization began again in Illinois, and remembering the unpleasant experiences of a year ago, we decided to leave the sanitation of the camps themselves entirely to the military authorities. On the other hand, we conferred with the governor and the adjutant general with a view to having the State board of health given control over a zone at least one-half mile in width around all mobilization camps or other places where troops were encamped. A bill to that effect has passed the legislature. It gives us rather extraordinary authority in regard to the abatement of nuisances on the property of a municipality, corporation, and private individual.

I feel that we can probably get at this matter in the best possible way by asking that a sanitary unit of the medical service be created, that the Surgeon General of the Public Health Service be its directing head, that each of the State health officers be made a part of this unit in some capacity, and that they then take directions in matters of sanitation from the head of the Public Health Service, who will thus be a part of the medical service of the Army.

I am perfectly willing to say for Illinois that we will tender the whole machinery of the State health department and all of our facilities for the purposes of this work. The point that appealed to me about making the health officer a part of such a sanitary corps is that he has authority at present to look after the public health interests of communities where there are cantonments, that he is possessed with a police power which can not be surrendered, and that he can perform the duties required by the sanitary unit in the dual capacity of a member of such unit and a State health officer.

Dr. WELCH. Mr. Chairman, the question is, How are we to reach the constituted authorities who are able to formulate and put into effect a plan of this sort? This body can not do it alone. If the Surgeon General of the Public Health Service, the Surgeon General of the Army, and the Council of National Defense formulate a plan to be presented to the Congress of the United States, then we will have a starting point. Expressions by this body have no weight whatever until it is given authority by the Congress or by the President.

When the late mobilization took place the Department of Public Health of Alabama communicated immediately with the governor and was directed by him to take the matter up with the general in charge of the troops, who immediately availed himself of the services of the department of health. An engineer from that department has examined every mobilization camp which he has been able to reach. Furthermore, all of the water supplies at the different mobilization camps have been examined and passed upon by the department of health. In the majority of cases the water supply has been good, but in some cases it has been very bad. In one instance the camp had to be moved because of inability to get a proper water supply.

The Alabama Board of Health stands ready to do anything that Uncle Sam wants it to do, if we can find out what that is.

Dr. KELLEY. It is the desire of the representatives of the Council of National Defense that Dr. Tuttle and I act as representatives of the conference of State boards of health at the conference to be held to-night. It is the expectation that Dr. Martin and Dr. Stimpson, representing, I think, the Advisory Medical Board of the Council of National Defense, will be at our deliberations to-night.

I would like to add one other thought, in which I may be in error, though I do not think so. There has been an expression of sentiment this morning largely hinging on the hypothesis that some one knows exactly what we ought to do and where we would fit in under the War Department or any bureau of the Government, and that all we are waiting for is for that authority to tell us what to do. I believe that none of the gentlemen who represent the medical phase of the Council of National Defense call themselves sanitarians, or

feel, with the exception perhaps of Dr. Bond, that they are the ones who should decide where we can fit in best. I think they will most agreeably receive suggestions from this body. If we who have done State and Federal sanitary work are not competent to say where we would do best, who is?

Another thing I should like to mention is in regard to this slacker question. I think probably all of us feel a certain urge to join the colors. I remember my own experience in the Spanish War. Although I was under age and my parents were very loath that I should enlist, I probably would have gone if I had not been cut down by an attack of the measles. I owe that much, perhaps, to the lack of progress of sanitation in my district.

A few years ago, when I was health commissioner of the State of Washington, I had nearly filled out papers applying for membership in the newly formed Medical Reserve Corps, when something puzzled me and I went to a friend, a retired major in the Medical Corps. It appears that he had pretty good prophetic eyesight. He said: "Are you keen about joining this thing?" I said: "No; but I thought they needed me in the Sanitary Corps." He said: "I have been through this thing. You are health commissioner. If you join, in times of peace you will have a connection with a very fine corps of gentlemen and the privilege of the Army and Navy Club in Washington when you go there. That will be all it will amount to. But in time of war you will be a mere personal chattel, under the orders of almost anybody, and not knowing what you are going to do. You will not be able to resign. I believe you can not do better than by staying here." That is the only reason I am not in the Reserve Corps. I feel, after hearing what has been said by Dr. McCormack and others that we would be somewhat lax in our duty if, at the risk of being called slackers by some, we did not express our opinion that it would be a gross national mistake from the standpoint of military service to take our trained sanitarians and set them to making guesses on bad hearts.

One of the eight district health officers in Massachusetts joined a company of cadets, and last year while we were mobilizing for the Mexican trouble he was at the camp as a corporal. We lost his services for the time being as district health officer. Fortunately some of the Regular Army Medical Corps men discovered that he had medical experience, and they made him, although only a corporal, an acting major of the Medical Corps, and probably he did some service as a sanitarian. But now he is called again, and there is no knowing whether his services as a trained sanitarian will be made available or not.

We have the example of England to back us up in expressing our opinion that these things are a mistake. It would be a great ad-

vantage for some of our allied forces, for our engineers and others, if we can have a distinct recognition of a sanitary reserve corps and of the fact that we can do military duty and have a military status without necessarily wearing a uniform.

Dr. RUCKER. Mr. Chairman, may I speak just for a moment in regard to one idea that Dr. Kelley brought out about the Council of National Defense? This is a very interesting zoological entity. [Laughter.] It is very interesting to study the way in which it works. There is, first of all, the council, which is composed of all of the members of the Cabinet, with the exception of the Secretary of the Treasury, who is the health officer of the Nation, and the Attorney General. [Laughter.] The council, I may say, is a legal body, regularly constituted by law, and for which appropriations have been made by Congress. Under it is an advisory body, appointed by it, which is called the advisory commission. Medicine, hygiene, and sanitation have one representative on that commission, Dr. Franklyn Martin, of Chicago. Under him there is a general medical board, members of which are the surgeons general of the three services and a number of other men. Under that board are various committees, including that on hygiene and sanitation. There is also an executive committee, and the surgeon general of this service is one of the members of that committee.

Now, the way in which the State health officers as an organization would reach the Council of National Defense would be through the committee on hygiene and sanitation, through the general medical council, to the executive committee, to the advisory commission, and then to the council itself. You see that there is a fairly direct communication which can be established if you wish.

Dr. COLLINS. Mr. Chairman, as I understand it, our business here is to volunteer our services to the Government, and I am instructed by the governor of my State to say to you that we are willing to do anything and everything possible to bring about success in the national struggle in which we are now engaged.

In Texas we have both local conditions and international troubles to deal with. We are called upon to cooperate, and have been cooperating, with the Public Health Service, the immigration agencies, and the customs department. We have made a sort of cooperative machine of our health service along the Texas border, which is 1,400 miles along the Rio Grande or 900 miles as the crow flies. We have found that cooperative plan to be reasonably effective, although some disease has crossed the border. We are also cooperating to some extent with the Army service, and our relations with them are entirely pleasant.

Dr. Rucker has just mentioned the red tape, in common parlance, that is needed here to accomplish what we down in Texas just get

up and do. [Laughter.] We do not look up the law until after we do the act. Then we look it up to find out what the trouble is about.

Speaking for Texas, I want to say that we are willing to work in the rear rank or in the front rank or behind the guns or anywhere else you wish to put us. We want to volunteer and to get into the military machine with proper authority from some source to give us directions. Of course, we also have our State functions to perform, but we are willing and glad to cooperate with the Public Health Service or with the Army service or with any other service which has the authority to direct and advise us. I do not know just where that authority will come from. The Reserve Corps is a matter for this body to decide, and Texas is perfectly willing to take directions and receive advice in accordance with the majority opinion of this body when expressed in the proper way.

One of the doctors referred to the farmer who is to feed the troops. That, in my judgment, is one of the most important functions for us to perform here. Conditions and emergencies can be met as they arise, but food problems and supply problems have to be thought out and prearranged. I believe that our State university is perhaps leading along that line just now. Within the last few weeks they have organized in their home economics department a training school and have agreed to send out a thousand lecturers over the State to teach people how to live economically and how to save a surplus for the Army. They are going to publish a bulletin giving economic menus and the food value of each article of diet. The university is also training and drilling 1,500 students for military service. In fact, there has been established what amounts to a complete department for military training.

I do not know whether I can say anything further, except that you can set us down as ready and willing to do everything that we can consistent with good citizenship and to place at the command of the Government all facilities possible.

Dr. McCORMACK. Mr. Chairman, it seems to me that we are all agreed about this matter, and I am sure that the Council of National Defense, as Dr. Kelley has suggested, is ready to consider all the expert advice we can give. I would therefore like to move that the committee already appointed be requested to confer informally with Dr. Martin, as the medical representative of the council, so that he will be prepared when he comes to-night to state the views of that body. In this way a cooperative plan can be drawn up with the approval of all. Dr. Martin, while he is a surgeon, is one of the distinctly great organizers of the country. He is a born organizer; he knows how to do splendidly whatever he undertakes to do, and I have heard Dr. Murphy say that he considers him the greatest organizer that the medical profession ever developed. It is with distinct

pride that we come together where we will have the benefit of his views.

Mr. BRONSON. I beg to second that motion, and in seconding it I wish to present one viewpoint a little more emphatically, perhaps, than it has been presented by the gentlemen from Washington and Texas.

North Dakota is a large State, sparsely populated. Its problems along sanitary lines have not been considered, perhaps, in the manner in which you in the East consider such problems. I am not a doctor; I am a mere lawyer; but I come here to represent the North Dakota State Board of Health. We seek your cooperation and advice because we need it. Furthermore, if this Nation is to get food this coming year it must be from North Dakota, the leading wheat State of the Union, and the problem for that State is therefore a very serious one, especially in regard to the harvesting of the wheat. We will need an army of men, as before, to come into the State and harvest the grain for the troops which are to be trained. As a result health problems will arise. We consequently need your advice and assistance.

I beg further to state that when the time of need comes the farmer, like Cincinnatus of old, will be ready and will be found right at the front and with the colors.

Dr. HAYNE. It seems to me that this committee might also consult with Surgs. Gen. Gorgas and Braisted.

Dr. WELCH. Would it not be strictly in accordance with the motion to say that Surgs. Gen. Gorgas, Braisted, and Blue meet with the committee?

Dr. McCORMACK. One reason I did not suggest that was that all of the recommendations which have been made to the Surgeon General of the Army have actually been made to Dr. Martin. They are acting through him. But I would be glad to include all the officers of all of the other Government health services.

(The motion was carried. A recess was taken until 2.15 o'clock p. m.)

AFTERNOON SESSION APRIL 30, 1917.

The conference reconvened at 2.15 o'clock p. m.

REGISTRATION AREA FOR COMMUNICABLE DISEASES.

The SURGEON GENERAL. At the conference last year you passed a resolution to the effect that the creation of a registration area of known disease prevalence was considered to be now feasible, and you recommended that I inquire into the practicability from the standpoint of the Public Health Service of establishing such an area and determine how the area should be formed.

I have had the matter under consideration and think the establishment of such an area is entirely practicable. In fact, I think it would add much to the efficiency and accelerate the development of public-health administration in this country. I have considered possible plans for the establishment of such an area. There is one plan I believe to be better than any other suggested, and I will ask Dr. Trask to explain it in detail.

Dr. TRASK. The plan is as follows:

That local health officers of cities, counties, and towns be appointed agents of the Public Health Service at nominal salaries, that these agents, working under the general supervision of a collaborating epidemiologist or other officer detailed to the State, be furnished with standard notification blanks for distribution to physicians; that the physicians report cases of the notifiable diseases on these card forms to the local agents of the Public Health Service. When these reports are received by the agent the local health department can copy or abstract such of the data from these reports as it needs or wishes for local record, and the reports themselves can then be forwarded to the collaborating epidemiologist detailed with the State department of health. At the State department of health such copies or abstracts can be made as are necessary or desired for State records, and the reports can then be forwarded by the collaborating epidemiologist to this bureau, where they will be compiled and statistical analyses made from time to time.

This plan or any other feasible one would work only in localities where there were definite legal requirements for the notification of the diseases to be compiled; and not only would there need to be definite requirements but there must necessarily be a definite enforcement of these requirements. The notification of disease is of such a nature that legislation requiring it does not automatically enforce itself, nor is it voluntarily complied with to any great extent. It would be meaningless and a grave mistake, in my opinion, to include in such a registration area territory in which notification was not enforced. This enforcement must necessarily be by the State and local authorities, as they alone appear to have jurisdiction. The State or locality then would need to guarantee definite enforcement of notification. Provision would need to be made that reports of cases made to the agent of the Public Health Service would be considered as complying with State and local requirements. There would also need to be some standard by which the existence of enforcement could be definitely recognized and gauged. This implies also some means of discovering violations of the law and of checking the completeness of reports.

Intimately associated with such an arrangement, it seems to me, is the question of the status of health officers. There is a serious

doubt in my mind as to whether enforcement of notification of disease will exist in localities where the health officer is what is known as a part-time officer. Certainly it can not exist where the local health officer is also engaged in the practice of medicine. It is possible that a part-time health officer, whose vocation was that of a practicing lawyer or school teacher, might enforce the notification of disease, but I think it is a fact proven by past experience that this would not be so where the health officer was a competitor of the practicing physicians.

If there is any information that the health authorities of the country could furnish or anything that they could do that would be of particular service at this time, when the Nation is at war and about to raise a large Army, it would be to make available definite information as to the relative prevalence and geographic distribution of communicable diseases.

STATEMENT OF HON. BYRON R. NEWTON, ASSISTANT SECRETARY OF THE TREASURY.

The SURGEON GENERAL. Gentlemen, the claim has been often made that health has no representation in our Federal Government. This is true in a literal sense, but when we consider that the Secretary of the Treasury, with whom this body has official relations, has charge of the health of the Nation no less than of its wealth, it is seen that health actually has adequate representation. It is the Assistant Secretary, however, to whom we must turn for immediate and detailed data. That his guidance has always been kind and wise and well-directed, you all know. I now have the honor and the pleasure of presenting the Assistant Secretary, the Hon. Byron R. Newton.

Secretary NEWTON. Surg. Gen. Blue and gentlemen, I find myself in a somewhat embarrassing situation here to-day. Ordinarily, when the Secretary or myself is called upon to address medical men who gather here, the Surgeon General or Dr. Rucker or some of the "high brows" of the service call us aside and give us a cue as to what we are to say; they outline a few amiable and diplomatic remarks; but on this occasion we are all so busy that Dr. Blue has not had an opportunity of telling me what to say. Therefore, I suppose I must just tell the truth, and speak what is in my heart. [Laughter.]

What really comes first into my mind in speaking to you gentlemen who represent all of the States is my appreciation of your patriotism. Now, it is a very easy and natural thing for the average American to be patriotic when the guns are flashing and the bands are playing and the American impulse is stirred, and it is another thing for people to be highly patriotic at all times, and that is what you gentlemen are.

One of the most satisfying and inspiring things that comes under my notice as Assistant Secretary is the splendid cooperation of the State boards. We notice very frequently that there is a point of friction between the local government and the Federal Government, when we try to cooperate. I sometimes think that there are people throughout the country, so far as their relations with the Federal Government are concerned, who regard this country as the un-United States of America instead of the United States of America. It is not so with you gentlemen. It does not make any difference whether it is a matter of typhoid epidemic, whether it is a question of quarantine, whether it is a question of rural sanitation, you are willing, intelligently interested, and helpful, and I do not believe that you in your local fields can appreciate how much that means to a Federal department.

The thought came to me—I do not know that I ought to say it, but it is in my mind—that if we should find, if there could be demonstrated among the representatives in Congress from the various States, the same intelligent appreciation of the needs and the advantages of this wonderful work that you gentlemen have, the progress would be much more rapid than it is. I do not know just what you have taken up so far as the needs of war preparation are concerned. I know at a conference the other night at which the Surgeon General was present as a representative of the Council of National Defense, I made this suggestion, that there was one body of men in this country about whom we did not need to worry so far as their intelligent cooperation was concerned, and that was the men in the various States who are interested in the medical work and sanitary work.

I am sorry the Secretary could not have been here. He is so overwhelmed at the present time that it is impossible, almost, for him to get one minute. For instance, I have just come now from a very interesting session over here at the Capitol. We have been trying to determine on the immediate construction of a temporary building to house the extra activities of the Navy. Those things are pressing in on us with tremendous force. But I do want to say this to you, that if the Secretary were here I know that he would express to you about what I have tried to say to you. Our interest and our confidence and our admiration are with the Public Health Service, and we know how you are cooperating in everything. We know the spirit of willingness and intelligence that characterizes all your acts.

I thank you for hearing me. [Applause.]

The SURGEON GENERAL. We are greatly indebted to the Secretary for his remarks, and I trust that he will remain throughout the afternoon with us.

Secretary NEWTON. I would enjoy nothing more, but I have not touched my official mail yet, and I do not know how many rows there may be around my desk now, so that I must leave you.

The SURGEON GENERAL. Very well, Mr. Secretary.

(Secretary Newton here left the conference.)

ANNOUNCEMENT.

Dr. KELLEY. I would like to take this opportunity to make an announcement. It seems that some of the gentlemen did not thoroughly understand the arrangement that was announced this morning. It has been arranged to have a session of the conference of State and provincial boards of health—not simply the committee, but the entire conference—at the New Willard to-night at 8 o'clock. At that time the conference of State boards of health, of which Dr. McLaughlin is chairman, and which is trying to arrive now at some resolutions they wish to take up and discuss and pass before to-night, will make its report.

REGISTRATION AREA FOR COMMUNICABLE DISEASES—Continued.

The SURGEON GENERAL. Dr. Trask's remarks are open for discussion.

Dr. KELLEY. I would like to ask, by way of opening the discussion, a couple of questions of Dr. Trask: Would this proposition of having a standing scale of reporting under the service be so arranged that the several States by regulation might make those reports their reports, and is it the expectation that those individual-case reports come to us or only the consolidated reports from the collaborating epidemiologists?

Also, one other question: I understand at the present time it is the law of the State that reports shall be made in writing; that that has been held usually hitherto as a chief obstacle and reason why the franking privilege of the Post Office should not be used. Now, if this State, by appropriate act of its board of health, or legislature, if necessary, engaged that such reports from the local health department sent to the State office could be used for the official reports of the State department under their law, would that be legal? Those are two questions that I would like information on.

Dr. TRASK. As to the first question, in regard to whether the original reports would need to be sent on to Washington, in my opinion they would.

In regard to the other question, the States themselves would need to attend to the enforcement of notification, and to see that the reports were made. The plan that you suggested is the one that had occurred to me as being the only feasible one, namely, that the State

health authorities agree that a report, made in conformity to this plan to the local agent of the Public Health Service, who in most instances will also be the representative of the local health office, would be considered as complying with the State law, or at least agree that when such reports were made prosecutions would not be started.

Do my remarks answer your questions?

Dr. KELLEY. They answer them, but I am afraid they interpose insuperable difficulties. In most States those reports are now required by law from the local board of health to the State health department under legal requirement, and they have to certify them. We do it every day, as the only means by which the cities or towns can recover from the States for those who have no legal residence in the towns. That would mean a duplicating system; two sets of reports, which I do not believe we would ever get any local health officer to do.

Dr. TRASK. That point is not insuperable. The object of appointing the local health officer as agent would be to make the ultimate collection of these data under the Federal Government, so that the Federal Government could in its usual way distribute blanks for their collection. If in Massachusetts they wished to use and retain the original reports locally as they are now doing, but the results they were getting came up to the standards which had been adopted and the guarantee of notification was satisfactory, then transcripts of the local records might be accepted by this bureau. The State then would have to guarantee the ultimate notification, and they could carry on the reporting in the way in which it is done now.

Dr. BRACKEN. I would like to ask Dr. Trask who would appoint these local men? Would they become ex officio representatives of the Federal Government, or would they be nominated by the State authorities?

Dr. TRASK. Undoubtedly the nominations would have to come from the State authorities who were going to be responsible for the notifications.

Dr. BRACKEN. I watched for that in your presentation, and it did not come out, and I thought probably that was what you intended, of course. It would be a very dangerous principle to make it possible for certain men in certain positions to become ex officio representatives of your service, because they might not be in sympathy with the work of the State, and they might greatly embarrass the work of the State. I can understand such a possibility.

Dr. TRASK. Yes; that would not do at all.

Dr. RANKIN. I should like to ask Dr. Trask this question. Of course, I take it that the Federal cooperation such as you have mentioned here would be based somewhat on the State laws requiring the

reporting. You would not be furnishing franking privileges and blank forms to the States where the law was imperfect or imperfectly enforced?

Dr. TRASK. Right there, Doctor. Just hold that thought. We would furnish the franking privilege to no one. The Federal Government would be collecting for itself data, information regarding the prevalence of disease, which it wants and needs—which the whole country needs. It would secure these data only from localities where the requirements were up to such a standard as to make it worth the Government's while. Now, because such a scheme would be the most convenient and practicable one, it would appoint as its agents in these localities men in the local health department designated by the State health authorities. The States would thus be a partner in the collection of the data, and they would guarantee and see to the enforcement of the notification.

Dr. RANKIN. What, in a general way, are the conditions under which you would recognize a State as suitable?

Dr. TRASK. That is a question, I should say, which this conference should determine. Personally, I believe that a full-time health officer, at least if he is a medical man, would be necessary. Then this conference would have to determine how it would gauge completeness—the standard by which it would determine whether cases are being satisfactorily reported.

Dr. GARRISON. I would like to ask you a question. Last fall, I think it was, Dr. Tuttle sent out a circular, I suppose, to all State boards of a form he had drafted, passed by his general assembly, memorializing Congress to extend the frank privilege to the State boards of health. In 12 hours after it left my office my general assembly passed such a resolution and memorialized Congress, and my Congressman immediately wrote back and said he would gladly favor such a proposition, but they would not have time to pass it before adjournment. Why could it not be taken up at this time and passed as a war measure for the purpose of collecting this very valuable information?

Dr. McCORMACK. When Dr. Trask finished his statement I felt very much as if in Kentucky we were going to have a very perfect notification system in operation after a short time. After hearing the answers to these questions, however, I am a little doubtful whether we are ever going to have one. It seems to me there are two viewpoints from which we should approach the problem.

First, what is the purpose of notification? Is it the prevention of the preventable diseases or is it the compilation of statistics with regard to their existence? It seems to me that the first thing is the prevention of diseases and that the matter of the statistics to be collected is incidental to that. If only a few cases of typhoid fever

are notified to the local health officer and he does his duty in regard to them, he has prevented the spread from those focuses of infection, but he has not done his duty unless he has prevented the spread of disease from every known focus whether he has obtained complete reports or not.

In the next place, if we are going to require that there shall be an all-time health officer before we collect morbidity statistics, then it seems to me we are losing one of our greatest arguments in favor of the all-time health officer in the reports that are in existence and the necessity of having firemen to put the fire out. If there was no fire and the general public knew of no fires, there would be no fire department, but knowing of the existence of fires they buy the apparatus and employ men for the purpose of relieving the situation. I believe we should approve any system of morbidity reports that will begin to get reports in considerable numbers. I do not think the employment of full-time health officers ought to be essential. In Mississippi, where they have practically none but part-time health officers, they are getting almost perfect morbidity reports—at least their morbidity reports are certainly extremely gratifying, and they could be made practically perfect by the generous support of the Public Health Service under this plan.

The system proposed by Dr. Trask appeared to me to be very nearly ideal, for the notification card can be addressed to the agent, United States Public Health Service, to the county health officer, or whatever the notifiable position in the particular county or township is, and be signed, "John L. Jones, Smith County, Agent United States Public Health Service," or "Agent Graves County." The plan answers all the requirements of the State law, and the data are also available for statistical purposes by the Federal Government and for all those purposes of investigation and training in which we are all interested.

I believe this is the most important suggestion that can come before the conference, because I believe that the actual knowledge of disease conditions in this country is absolutely essential. In my State we are not getting any morbidity reports, and we will not get any until this or something like it is adopted, because we have a sort of tacit understanding among ourselves that our medical organization does not begin to enforce any laws or undertake any activities until we can do them right, and as long as the State department has as little money as it has, it can not pay the postage for morbidity statistics. If this plan were adopted we could start morbidity reports immediately. We have had requests from some 96 or 97 cities in the State for the passage of a law requiring morbidity reports whenever the State board of health thinks that section of the law should be put in force.

The SURGEON GENERAL. How many counties are there in your State?

Dr. McCORMACK. One hundred and twenty. We could put the law in force 30 days after it is made.

Dr. BRACKEN. I would be very sorry to see a ruling made against physicians who are not whole-time health officers, because I think we can get very efficient reports from medical men who are only part-time officers. I appreciate the importance of possibly forcing districts to secure whole-time health officers, but I presume you intend to cover municipalities as well as districts, do you not, Doctor?

Dr. TRASK. Yes; you would want to include them.

Dr. BRACKEN. I think you will have to include a good many municipalities with good health officers who are not whole-time men. I think that efficiency in the district should be the determining factor as to admission.

I am a little surprised to hear Dr. McCormack say that he does not intend to undertake anything until he can do it well. There are some things in which we have to perfect the methods as we go along. Of course, I know you can make a perfect Ford, but some other machines improve year after year.

I think the most important thing in this is to get as complete morbidity returns as we can. Is not that the idea, Doctor? We can not determine mortality rates when we do not know the morbidity reports—is not that so?

Dr. TRASK. Yes.

Dr. BRACKEN. I am thoroughly in sympathy with this plan, and I do hope it will be open to the community that can make good progress, whether it has a whole-time medical officer or a part-time man.

I would like to ask Dr. Trask a question. Do I understand the plan rightly in saying that the local health officer will report directly to you, and that you will report back to the State health department?

Dr. TRASK. The local health officer, who is also an agent of the Treasury Department, sends the reports to the officer of the Public Health Service detailed at the State department of health.

Dr. OLIN. I would like to ask how that plan would work out in Michigan, where we have nine full-time health officers and thirteen hundred who are not full time? I think we are getting as good reports as almost any other State.

Dr. TRASK. I would say that this registration area which is being considered is a little apart from any other registration area. When a registration area is established it will be one composed of territory in which reasonably good results are being obtained. The territory in a registration area would in a measure be comparable.

We can go on working and striving as we have for a number of years to improve notification in the country in general. We are now taking advantage of any new ideas we get to continually improve notification, and the information obtainable of the prevalence of disease. Our experience has shown that the State and local health authorities, with only a very occasional and unusual exception, will report to us and give us all the information that they have. So that we are now collecting for the United States practically every bit of dependable data regarding the prevalence of disease. We would continue to get that information, outside of the registration area as well as inside of it. The difference would be simply that the area would represent territory that had attained a certain degree of completeness in notification. It would include territory where the health authorities were, at least, using every effort to enforce notification. I can not bring to mind at this time a single area in the United States where the health department is using some really definite checking system whereby it can find violations of its requirements of the notification of disease, and is acting upon the reported violations.

Dr. DOWLING. Mr. Chairman and gentlemen, I think that the offer made us should be accepted. In Louisiana we have been making earnest efforts to make the State reports of communicable diseases full and faithful; but you have no idea how difficult it is. If the reports were to come to the Public Health Service, and Dr. Blue were to write to the doctors and say: "You have had communicable diseases and you have failed to report them." And, then, he asked for an explanation—if that was within his power—the notification of diseases would be much stimulated.

I recently made a trip over Louisiana with representatives of the Public Health Service and one of the leading statisticians of the country. I found that out of 1,400 doctors, outside of New Orleans, there were 399 who did not report a birth or a death or a communicable disease in 1916. The district attorney is the man to whom we must leave the enforcement of notification. I had occasion recently to ask for the prosecution of one of the most prominent doctors in the State—making the most money. I called to see the district attorney in person, and left the papers with him. After two weeks, he replied: "I have gone over the papers thoroughly, and have concluded to take no action in the matter. There are many other instances where there are no reports of that kind." These men are friends of the doctors and live in the communities where they live. I do not know how we are going to get at this until there is an official whose business it is to enforce notification. The next best thing would probably be to have some department of the Federal Government handle it.

It would be ideal if we could have all-time health officers, and it seems to me that the registration areas should be limited to those having all-time health officers. That would be a stimulus to the people to secure all-time health officers. Unfortunately we have only one in the State. As long as people have authority to pay only \$200 or \$300, they will not pay more. I recently went to a place where they had spent \$100,000 for a courthouse, and \$78,000 for a jail, and yet they were paying a health officer only \$300 a year or \$25 a month. I do not know how we are to get at them; but it seems to me that this provision would be a wonderfully good way in which to start. I realize, of course, that the situation is not as bad with most of you as with us. Our people know what it is to have policemen, and sheriffs, and a fire department; but they have not as yet realized the importance of health.

Dr. FRANTZ. Three months ago, for war-time purposes, Delaware established a return morbidity postal card report. Full data are requested as to the disease, the name of the patient, the name of the mother, the name of the husband, the occupation of the husband, the name of the child, and whether the patient or any member of the family has engaged in any particular occupation. The card is signed by the physician, returned to us, stamped, dated, and filed. If a death is reported and no morbidity card is found, we go after the doctor.

A State should have 100 per cent of its cases of disease reported, because that is the most important part of a health department's work, so far as prevention of disease is concerned. The knowledge of the presence of disease is absolutely required before an epidemic can be prevented. I should say that we are getting about 40 per cent of the cases, not over that.

Now, gentlemen, until we settle the war with Germany the State of Delaware is perfectly willing to give to the United States Government all the information they want and to pay the bill, but when this war is over I am going right back to where I have stood for the last 10 years—for the franking privilege for matters furnished to the Public Health Service by the State officials of the respective States.

Dr. LEATHERS. I approve very thoroughly of Dr. Trask's idea that we should have a perfectly accurate system in connection with these morbidity statistics, but I question very seriously, or at least I fear that it would be a very unfortunate mistake, to begin with a plan requiring that each county must have an all-time county health officer before its morbidity statistics are recognized by the Government. My reasons are the following:

In our State we are trying in every possible way to get the physicians of the State to report these morbidity statistics, but there is a

good deal to consider in advocating an all-time health officer in each county of my State at this time. As a matter of fact, if our legislature were to pass a bill making that requirement, I do not know where we would find the men. They are not available. We can not place men in those positions who have only casual experience in health work, although they may have done very well in a certain way as part-time men. We want experienced men. Furthermore, if these full-time health officers have not made a reasonable success in five years, the State legislature will put them all back on the part-time standard. It is a business proposition, aside from the humanitarian point of view. Success from that point of view will not be simple in the case of a man with a relatively small salary, with little equipment, with no bacteriologist at hand, with no traveling expense fund, and with every thing to be paid out of his salary.

For these reasons it seems to me that it would be practicable for a plan to be worked out at this time so that we could utilize the agencies which we now have and still have a reasonably efficient morbidity service. If we discriminate against the part-time men, every bit of statistical information we get from these part-time men will be discredited, and people will not recognize them because the Government will not. It would be years and years before our statistical data would command the respect of the medical profession.

In our State we have been somewhat successful in getting the doctors to report. During the past two years we have had reports from over 90 per cent of them, as indicated by the list of their names recorded by the county health officers. The county health officer sends us the names of doctors who do not report. Then we write these doctors, asking why they do not report. If they deliberately refuse to report, we sue them, or have the county health officer sue them. Last year 153,000 cases of malaria were reported, showing that a certain success has been achieved in getting this disease reported. I simply wanted to emphasize the point that some system should be worked out that will not discredit the machinery we now have for getting morbidity statistics.

Dr. WOODWARD. I move that Dr. Leathers, Dr. E. G. Williams, and Dr. Crumbine be appointed a committee to confer with Dr. Trask as to the proper and practical registration area, and report to this conference to-morrow.

(The motion was seconded.)

The SURGEON GENERAL. Dr. Woodward, will you go on that committee?

Dr. WOODWARD. I am not a State health officer, and am not familiar with that work.

(The motion was carried.)

LOCAL HEALTH ORGANIZATION.

The SURGEON GENERAL. The next subject is local health organization, its needs and the means necessary to improve it, especially in rural sections. I will ask Dr. Lumsden to open the discussion.

Dr. LUMSDEN. Mr. Chairman, I am somewhat like Secretary Newton was a while ago: I am unprepared; I am afraid I will have to tell the truth. [Laughter.] I did not know that I was going to be called upon to open this discussion. It is a subject which has received a good deal of attention in this conference, and rightly.

This morning some of the gentlemen taking part in the discussion of a mobilization of the health forces of this country referred to the lack of cooperation between the military sanitary authorities and the civil sanitary authorities. I think that if one of us happened to be the chief sanitarian of a military organization, and if our encampment happened to be in the immediate vicinity of some town of 10,000 or 15,000 population, and if we went to that town before or at the beginning of the encampment to get in touch with the local health officer, and after a diligent search of three days, inquiring among the citizens generally, we were unable to ascertain who the health officer was, we would appreciate that there is some practical difficulty in cooperating with local health authorities. I doubt if there is a member of this conference who has not had an experience something like that. I have gone into towns of from 8,000 to 15,000 and visited drug stores, grocery stores, dry-goods stores, and doctors' offices to find out if anybody knew who the health officer was. It was interesting to find out how far I could go before finding a person who knew who the health officer was.

In discussing an individual State a moment ago Dr. Leathers said that perhaps we have been too enthusiastic about the one-man health organization, even with a full-time man. I think we must regard the county or township, according to the governmental unit of the State, as the logical unit to consider in the formation of a local rural health organization. For most of the States the county appears to be the logical unit. For the average county, then, probably a one-man county health organization would be inadequate to carry out a scheme of health work such as we health men know is needed, but we might also say, perhaps, that a health force of three would be inadequate, or that one of ten would not be ideal or perfect. The question is, How far can we expect the people to go in supporting financially a reasonably adequate health organization, one adequate enough to be coordinated with the State health organization and the national health organization? Now, I think we all agree that we will be going a long way if we can get even one man to devote all his time to health work in a county. If he was efficient—and if not he could

be fired—he could do much to give the people an idea of the value of health work. He could deliver a sample of health goods for the people's inspection. He could start the thing going; and if the population of the county was sufficient to justify a larger health organization he could create a demand for it. The part-time health officer can also help to create a demand, but we can not expect a man getting \$10 or \$25 a year, or even \$300 a year, to leave the business from which he makes his living to devote his energies very largely, persistently, or consistently to advertising any line of goods such as health work unless he is well enough off to become a practical philanthropist.

I think a reasonable, adequate health organization for the average county, say of about 20,000 population, would be about three men, a full-time health officer, a sanitary inspector, and a clerk, who preferably should be a trained nurse, to look after office work and to assist in visiting nursing. That costs money; but I believe that, in the majority of instances where reasonably efficient services were obtained, the county with such an organization would be pleased with the results and would continue it in operation.

The subject under discussion covers the means necessary to improve local health organizations. I think that this country is beginning, from every standpoint, to coordinate its forces. We are getting ready to increase markedly our efficiency as a Nation. I do not believe that there is any field more important than that of trying to correlate our health forces and make their work more efficient. When we prevent a death on this side, it is just the same as killing a man in the ranks of the enemy, if the man saved is capable of bearing arms. So that, particularly at this time, I believe the National Government and the State governments should do all that they can to bring about reasonably adequate local health organization.

At the present time the sundry civil bill, which is in conference, has in it an item which has been acted on favorably by both the House and the Senate, by which the Public Health Service will be able to join the State and county health organizations by paying a part of the expenses for county health work, as a demonstration. Now, the appropriation is \$150,000, and it will not be feasible to extend that work to every county in the United States; but it will be possible to take a county or a group of counties in any State where we can get adequate cooperation and effect there a demonstration in the working of what we regard as a reasonably adequate county health organization to carry on local health work.

TYPHUS FEVER SITUATION.

The SURGEON GENERAL. As Dr. Rucker is not present, I will ask Dr. Kerr to open the discussion of the next subject—the typhus-fever

situation, extent of prevalence, measures of prevention, and additional needs.

Dr. KERR. Dr. Rucker has handed me the following memorandum on the extent of typhus-fever operations along the Mexican border:

During the period from July 1, 1916, to April 14, 1917, 80 cases of typhus fever have been reported from points along the Texas-Mexican border (principally at El Paso and Laredo). Twenty-four of these were reported since January 1, 1917.

During the period from January 1 to April 14, 1917, over 600,000 persons have been inspected by medical officers. Of these persons, 54,953 were disinfected for destruction of vermin and 394 were refused admission because of illness. Five persons were turned back because of refusing disinfection.

There are 11 officers of the service on duty at points on the border. Five of these are commissioned medical officers, and other medical officers are stationed at the following ports: One each at El Paso, Laredo, Eagle Pass, Rio Grande, Brownsville, and Hidalgo.

At Eagle Pass and El Paso the service has now in operation steam disinfecting plants, housed in appropriate structures, capable of performing all the necessary operations in the matter of preventing the introduction of typhus fever. There is also disinfecting machinery complete at Laredo, and the same at Brownsville, and within a very short time this machinery will be assembled and put in operation, arrangements now nearing completion for the erection of structures to contain the same. In view of the small number of persons crossing the border at the smaller ports of Rio Grande and Hidalgo, arrangements for conducting the work are now complete without further expenditure.

In an emergency like this it would seem to be in the interest of States near by to join hands with the Public Health Service and the State of Texas in whatever might be necessary to prevent the disease from entering this country. If it unfortunately appeared among refugees or persons coming from Texas, it could be prevented from spreading to other States by means of the same cooperation.

Dr. HALL. Mr. Chairman and gentlemen, along the Rio Grande border we have had a typhus problem since 1914. Some typhus fever had been present there for 20 years—a mild form called Rio Grande fever—but it did not present a serious problem. So long as there was no railroad communication with the interior of Mexico, the situation was easily handled; but lately railroad communication has been opened and there have been many cases of typhus fever which we have had to hold up at the border. Furthermore, the Pennsylvania and other railroads of the United States are in Mexico after laborers, and these must be watched carefully to keep typhus fever out of this country. The plants which the Public Health Service and the State of Texas have been putting up now receive, I should estimate, about 2,000 laborers a day. Also, troops from Mexico City and from other points in the interior of Mexico have been brought up to the border with the intention of preventing any invasion of their territory. These troops have come from known infected districts.

That means additional work in keeping the infection from crossing the border.

The day after I left Texas to attend this conference, our legislature appropriated \$1,000,000 to care for the border situation. I think that, if our cooperation with the Public Health Service is continued, you will not have a typhus situation in the interior. At one time we had 100,000 United States soldiers at the border, and it is a matter of record that about half a million people crossed over into this country from Mexico; yet I do not think that there was a case of typhus fever among our men along the border. I believe that we will not do very effective work along the original idea of ridding the border of infection, however, until we are able to cross over into Mexico in a friendly way and help those people do the work that needs to be done.

Dr. BIERRING. I would just like to state an instance of isolated typhus occurring in Iowa last fall. There were five cases, and subsequently one case developed among Mexican laborers with the Santa Fe Railroad at Fort Madison, Iowa. The cases were housed in a box car and were subsequently transferred to the hospital at Fort Madison, Iowa. Through the very hearty and prompt cooperation of the Public Health Service and the State board of health, and the work of our epidemiologist, Dr. Ford, these cases were handled very promptly. Two cases died, and no subsequent cases have developed.

Dr. RUCKER. Mr. Chairman, the question of the employment of Mexican labor has assumed a very serious angle in this country. The European war has deprived us to a very large extent of employees for railroad construction work. As a result, Mexicans have been carried farther and farther north. I have no doubt that when the time comes to harvest the crops this fall we will find large numbers of these people living under insanitary conditions all over the West, the Middle West, and the Northwest.

There is this much to be said about the prevention of the introduction of typhus fever from Mexico. We have seen that it was impossible for the armed forces of the United States to keep the Mexicans from coming across the border. They have repeatedly done this on warlike missions. It is very easy to see how much more difficult it is for the civilian forces of the immigration authorities and the Public Health Service to prevent these people entirely from moving into the United States without proper supervision. The Mexican border is very long, the Rio Grande is at places very shallow, and it is exceedingly easy for these people to pass in a clandestine manner.

Now, one lousy Mexican in the incubative stage of typhus fever, going into a community where lice abound, is almost sure to spread the infection to the nonimmunes. In view of this fact, the Secretary of the Treasury on the 15th of February promulgated a regulation

requiring the railroad companies, and others maintaining camps for migratory workers, to keep those camps at all times in a clean and sanitary condition. This regulation permits the Public Health Service officers to inspect these camps at any time they see fit and to give directions for their sanitation. In this way not only can the spread of typhus be controlled to a considerable extent and be eradicated when it appears, but the spread of other diseases to and from camps of migratory workers can be prevented.

The important thing to bear in mind is the great difficulty of preventing the introduction of typhus fever by reason of clandestine entrance into this country, together with the fact that a regulation which is enforceable by the State health authorities as well as by the Federal Government exists and can be used by State health authorities in compelling the cleanliness of camps of migratory workers of every sort.

Dr. BRACKEN. May I ask what the doctor means by migratory workers?

Dr. RUCKER. The migratory worker is a hobo, which is a term fairly well understood. He may be termed "mobile." There are three classes of these people—hoboes, who work and move; tramps, who do not work but move; and bums, who stay still and do not work. [Laughter.]

Dr. BRACKEN. I was very much interested in this point, Mr. Chairman, for the reason that we have on railroads nowadays a group of men who are simply sent out by contractors. They are not working for the railroads that they are on. Do they come under that definition?

Dr. RUCKER. They are migratory workers. When I use this word "hobo," I use it advisedly. It is the term which migratory workers, such as those who maintain the so-called "hobo" college in Chicago, use themselves. They are termed "haut beaux" or "high beaus." The migratory workers are the men who go into the lumber yards and work in section gangs or work for contractors, etc.—men who do not stay in one place for any great period of time, who contract here and there, in this State to-day and in that to-morrow. They are citizens of nowhere.

Dr. COLLINS. This is a very important subject, and I want to go into the management of the border situation in a little more detail. As you know, at a conference last year, attended by the railway officials, the railway surgeons, and the labor employers along the border, as well as by representatives of the Public Health Service, the Immigration Service, and certain State and local health bodies, a set of rules and regulations were promulgated. A Railway Surgeons' Association was then organized. It was agreed that the immigrants should be deloused, vaccinated, if not already vaccinated, and given a health certificate. The railways were instructed—and they

have lived up to the provision, so far as I know—not to allow any-one transportation unless he had a health certificate not over 24 hours' old.

The labor-employing agencies are registered in Texas, and these were required (through the Labor Commissioner) not to invite Mexicans into the country, not to undertake to help them avoid the health authorities, and not to employ or ship a man up the State unless he had a health certificate. So far as I know, those provisions have been pretty religiously lived up to. Almost all points have been pretty well guarded and protected. Epidemics occurred at El Paso and Laredo, but the number of cases was negligible.

From a health standpoint, the question of typhus fever, gentlemen, is one of the most serious problems of the war in this country. All of northwest Mexico is infected, soldiers are being brought to the border, the civilian population is crowding over the border to hunt bread and employment, and the river is fordable half of the year throughout most of its length. The States most exposed are Texas, California, New Mexico, and Arizona.

The railway companies are very much alive to the problem. The chief surgeons have agreed to cooperate with the State health authorities in making inspections of their camps, and where a case has occurred they have been very careful to sanitize the camp and reinspect their men. They are watching in every way they can to prevent the spread of the disease. For instance, when six cases broke out in a labor camp of the I. & K. Railway, every construction and labor camp along the railroad was looked over and cleaned up, and in fact, all the living quarters were inspected. The Southern Pacific has done similar work.

Next year conditions will require more attention on account of the multiplication of foci. We do not look for an improved condition in the border country until a clean zone on the other side of the river is established. I should like to hear from the Public Health Service in regard to that matter. I believe that we ought to establish such a zone, a neutral ground, where the immigrants could be held, at least during the incubative period—about 12 days. I conferred with Dr. Pierce a few days ago in regard to this proposition and also with the head of the Bureau of Immigration, who heartily concurs in it. Of course, some military protection would be necessary, because it is not safe now to undertake work across the river. Such a zone could be operated on a mutual plan, in cooperation with the Mexican authorities. We are doing the very best we can at present, but possibly we might better our plans in some such manner as this. It must be recollected that all of the States are somewhat affected by the problem, because a Mexican can go anywhere in the United States within the incubation period of the disease.

The SURGEON GENERAL. The suggestion of the doctor that we cooperate with Mexico in a general clean-up is possible only in times of peace, and I doubt very much whether we could do anything in this direction during the present revolution in Mexico. We have communicated with them, though, with reference to conditions and have reports from the Mexican Government. We have sent experts there and they have been very kindly received. As you know, however, typhus fever is a disease of the high, dry, cool table lands, and not of the tropical ports on the Gulf.

Dr. RUCKER. In my desire to emphasize the clandestine entry of Mexicans into the United States I neglected to speak about what was being done at the quarantine stations on the border. These are located in all the border States and are fitted up with apparatus for the bathing and delousing of the persons of immigrants, and for the delousing of their clothes by fumigation. After the immigrants have been subjected to this process they are given certificates of disinfection, provided they are not in the incubative stage or show no evidence of the disease. After entering this country they are required to carry these certificates with them. As mentioned by Dr. Collins, the railroad companies have been asked to cooperate in this matter and have cooperated to the fullest extent, not selling transportation to immigrants not having the certificates. On one or two occasions Mexicans have been apprehended for endeavoring to use other people's certificates, but we have found that these precautions were so efficient as to prevent transmission of typhus by certified persons.

(At this point the conference adjourned until Tuesday, May 1, 1917, at 10 o'clock a. m.)

MORNING SESSION, MAY 1, 1917.

REPORT OF COMMITTEES.

MORBIDITY RETURNS.

The SURGEON GENERAL. Gentlemen, this morning we will take up the report on morbidity returns by Dr. Chesley, of the State Board of Health of Minnesota.

Dr. CHESLEY. Mr. Chairman and gentlemen: The committee on morbidity returns, owing to the advancement in the date of the conference, was unable to secure by correspondence the material for the basis of a report. I sent night letters to the members of the committee, asking each one to take up one part of the program outlined by Dr. Trask. That program is as follows:

REPORT OF COMMITTEE ON MORBIDITY RETURNS.

1. Amendments suggested to the model State law for morbidity reports. Discussion opened by Dr. F. M. Meader.

2. A discussion of the uses of morbidity reports in State health work. (a) Statistical uses, by Dr. C. Hampson Jones. (b) Endemic index, by Dr. E. R. Kelley. (c) Reciprocal notification, by Dr. A. J. Chesley.

3. Statement of the diseases notifiable in the several States, and discussion of a minimum standard for annual tables to show occurrence of preventable diseases, by Dr. J. W. Trask.

Distribution of cases of preventable diseases: (a) Geographically (by counties and cities); (b) chronologically (by months); (c) by sex; (d) by age; (e) nature of termination (recovery or death, or permanent deformity).

(The following information was distributed with the above outline of the committee's report.)

To illustrate utility of reciprocal notification.

Probable source of typhoid, or residence of exposed persons.	Minnesota typhoid imported cases.				Nonresidents exposed by polluted water supplies.	
	1913	1914	1915	1916	Benson. ¹	Warroad.
Manitoba.....	0	0	0	1	1	19
Ontario.....	2	1	0	0	1	7
Quebec.....	0	0	0	0	1	0
Saskatchewan.....	1	4	0	1	1	2
United States Public Health Service.....	17	3	1	5	0	0
Arkansas.....	0	0	0	1	0	1
California.....	0	0	0	2	1	1
Idaho.....	0	1	0	0	0	0
Illinois.....	1	1	0	4	17	1
Indiana.....	2	1	1	1	1	0
Iowa.....	4	2	3	3	27	0
Kansas.....	0	0	1	0	1	0
Massachusetts.....	0	0	0	0	1	0
Michigan.....	2	2	0	6	2	1
Mississippi.....	1	0	0	0	0	0
Missouri.....	1	2	0	0	8	1
Montana.....	10	4	2	3	3	1
Nebraska.....	0	1	0	0	7	0
New Jersey.....	0	0	0	1	1	0
New Mexico.....	0	0	0	1	0	0
New York.....	0	0	0	1	3	0
North Dakota.....	29	24	11	12	12	23
Ohio.....	1	0	0	1	3	1
Oregon ¹	0	0	0	0	1	0
Pennsylvania.....	1	0	0	0	3	0
South Dakota.....	6	7	2	12	42	3
Texas.....	0	0	0	0	1	1
Washington.....	0	0	0	0	2	0
West Virginia.....	0	0	0	1	0	0
Wisconsin.....	10	6	2	5	10	6
Wyoming.....	0	0	1	0	0	0
Provinces 4; States 26.....	88	59	24	61	150	68

¹ Benson accidental pollution, exposure between July 14-Aug. 12, 1914. Warroad condemned supply, exposure between Dec. 20, 1916-Mar. 1, 1917.

Tuberculous nonresidents referred.—1914, 87 cases from 17 States and 2 Canadian Provinces; 1915, 177 cases from 22 States and 3 Canadian Provinces; 1916, 239 cases from 22 States and 5 Canadian Provinces and 1 Alaskan.

Miscellaneous imported cases referred.—Smallpox (13), 1914, Iowa, 4; Michigan, 1; Montana, 1; Nebraska, 1; North Dakota, 2; South Dakota, 3; Wisconsin, 1. (14), 1915, Illinois, 1; Iowa, 2; North Dakota, 5; South Dakota, 3; Washington, 1; Wisconsin, 2. (11), 1916, Iowa, 1; Michigan, 1; Montana, 3; North Dakota, 4; Wisconsin, 2.

Diphtheria (6), 1914, Indiana, 1; 1916, Illinois, 1; Iowa, 1; Montana, 1; North Dakota, 1; Wisconsin, 1.

Scarlet fever (5), 1914, Iowa 1; North Dakota, 1; South Dakota, 1; Wisconsin, 2.

Measles (3), 1914, Iowa, 2; Texas, 1.

Epidemic cerebro-spinal meningitis, 1916, South Dakota, 1.

Poliomyelitis (6), 1916, North Dakota, 2; South Dakota, 3; Wisconsin, 1.

Leprosy, 1916, Montana, 1.

Dr. Meader has consented to discuss the amendments to the model State law for morbidity reports. Dr. Jones, of Baltimore, has consented to discuss the uses of morbidity reports so far as the statistical uses are concerned. Dr. Kelly will speak about the endemic index, and Dr. Trask wanted me to speak about reciprocal notification.

Dr. Meader will now discuss the amendments to the model law.

AMENDMENTS TO MODEL LAW.

Dr. MEADER. Mr. Chairman and members of the conference, I can speak about this model law only as it would apply to New York. I am not familiar with health conditions in other States except those, perhaps, adjacent to New York.

It seems to me that this law is too long. It is more like the regulations which a commissioner would issue for the control of communicable disease. If in the basic law we have simply the statement that all cases of communicable disease should be reported promptly to the State commissioner of health as prescribed by him, then we would have a law which would enable the commissioner of health to set at work in his State any system that he deemed most advisable; but aside from that, if we accept this as the form which should be adopted, there are two or three suggestions that have occurred to me.

The first suggestion that occurs to me is in connection with paragraph 9 on page 5:

If the disease is, or is suspected to be, typhoid fever, scarlet fever, diphtheria, or septic sore throat, the report shall show whether the patient has been or any member of the household in which the patient resides is engaged or employed in the handling of milk for sale or preliminary to sale.

After the words "typhoid fever" I would put "dysentery, paratyphoid fever, epidemic cerebrospinal meningitis, and poliomyelitis." Now, I will confess that I have not any direct evidence that poliomyelitis is spread by infected milk, and yet our conceptions of the infectious agent in that disease indicates that it might be spread by infected milk.

Also, at the bottom of page 5 I would include the diseases I have mentioned.

Over on page 6, in section 6, where it reads as follows:

Every teacher and every person in charge of any public or private school, including Sunday schools, shall report immediately to the local health officer each and every case which he or she—

I would scratch out the words "knows or," so as not to require her to make a diagnosis. Then it would read:

Which he or she suspects to be a case of a notifiable disease in persons attending or employed in his or her school.

Section 8 requires the transfer of the original report of a case of communicable disease to the State health authorities. In our State, for cities of over 20,000 people, we submit a blank upon which they can transfer the essential data of each case so reported and submit that blank to us daily. That gives us the information which we are after, and enables them to keep the original blank, with additional data which they want for the control of the disease, in their own office, and saves them the trouble of transcribing all of the information. That system is now introduced and is working very satisfactorily, so that it would seem that for cities of over 20,000 an exception might be made in regard to returning the original report card to the State department of health, if they submitted a few essential items in regard to each disease to the State department of health.

Section 9, on page 7, it seems to me does not belong in a model law of this kind:

Local health officers shall, in addition to the provisions of section 8, report to the State department of health in such manner and at such times as the State department of health may require by regulation, the number of new cases of each of the notifiable diseases reported to said local health officers.

The point is that he has already reported the case to the State commissioner of health, and this is simply a duplication at the end of the month; so it seemed to me that section 9 might be eliminated.

SEC. 11. No person shall be appointed to the position of local health officer in any city, town, or county until after the qualifications of said person have been approved by the State department of health.

It seems to me that that is introducing something that is not germane to the law. While it is an admirable regulation to have present in the basic law, yet it does not seem to me to apply to this particular law.

Those are the only suggestions that occur to me. I shall be glad to learn if any others have occurred to you.

DR. TRASK. Mr. Chairman, I move that the suggested amendments be considered as proposed to the conference for their consideration, to be recommitted to the committee for presentation again at the next annual conference. I think amendments to the model law should be required to be suggested and proposed at one meeting, to be acted upon at a subsequent meeting. I think the matter is of sufficient importance to warrant this procedure.

(The motion was seconded and carried.)

Dr. TRASK. Mr. Chairman, may I make one suggestion? In the interval members of the conference might express their ideas on the subject or make suggestions to the committee if they find modifications that appear to them advisable.

The SURGEON GENERAL. Dr. Kelley will discuss the "endemic index."

ENDEMIC INDEX.

Dr. KELLEY. Mr. Chairman, the endemic index, so called, is merely a device which we have worked up in the Massachusetts Health Department for the purpose of serving as an additional semiautomatic means of becoming aware at the earliest possible moment of the existence of incipient epidemics. I should like to read a very brief discussion of this device, taken from last year's report of our epidemiologist. This extract will probably explain the plan more exactly than I could extemporaneously.

Morbidity standards.—In order to promptly detect incipient epidemics, it is necessary for the health administrator to have some sensitive indicator of the variations in the prevalence of communicable diseases. In Massachusetts this indicator is furnished by the endemic index.

This endemic index may be defined as a numerical standard for judging the relative prevalence of any reportable disease in any community. It is based upon the amount of a given disease that has been endemic in a community over a period of years. By arbitrarily separating the epidemic from endemic disease it is possible to use the accumulated endemic experience as a basis for detecting the onset of epidemic influences. The index may be either daily, weekly, or monthly. In Massachusetts the monthly unit is the most practical.

Construction of the endemic index.—The details of constructing an endemic index for a given city for a given disease may be defined as follows: All reported cases of a given disease for a given month for the preceding five years are tabulated on sheets. From these sheets it becomes evident at once when an epidemic of the disease has occurred. The total reports of cases during this epidemic are excluded from the tabulation. The remaining figures are totaled and represent the endemic prevalence of the disease. The average of these figures is the so-called endemic index. This figure represents, roughly, the usual endemic experience of the city or town with the given disease for a given period of time.

This average, or index, gives a health administrator an arbitrary figure to be used as an indicator for epidemiological investigation. It has the further advantage of being a numerical standard that can be checked up by clerks who have no knowledge of communicable diseases.

The endemic index can be criticized from a statistical point of view. In constructing it we do not actually define an epidemic—we merely arbitrarily exclude evident epidemics. In adopting this course, some groups of cases may be excluded which should be included in our tabulations. However, this lowers the resulting index and merely acts as a factor of safety.

An attempt is now being made to construct a practical numerical standard for the definition of an epidemic. At present the data is incomplete. We believe it can be accomplished by proper grouping of our cities and towns on the basis of population and the total incidence of communicable diseases. This

information, plus the accumulated experience with the endemic index, will furnish the basis for this standard. From our practical experience with our present method this numerical standard is not a necessity.

Application in Massachusetts.—We have applied the principle of the endemic index in the following way:

A card has been devised for each city and town in Massachusetts, showing the following information:

1. The daily incidence of each reportable disease.
2. The monthly incidence of each reportable disease for the corresponding month of the previous year.
3. A monthly endemic index for each disease.
4. A weekly total of cases and deaths from all diseases.
5. A monthly total of cases and deaths from all diseases.

In addition the population of the individual city or town is placed upon the card. These cards are made sufficiently large to contain this information for an entire year.

The method of procedure with these cards is as follows:

The daily reports of individual communicable diseases coming from each city and town are recorded by the clerk who has charge of the communicable-disease postal cards. As soon as any disease in any city or town equals or exceeds the endemic index for that disease for a month, the endemic index card is at once placed in the hands of the administrator. This saves the administrator the trouble of looking over all the cards. It does not leave the unusual prevalence of any communicable disease to individual judgment and it furnishes at once the indication for administrative action.

The inclusion upon a single card of the cases of the previous years and incidence of the diseases, and the weekly and monthly total cases and deaths, furnishes all of the necessary data for the institution of two of the fundamentals of epidemiological control of communicable diseases, namely, prompt and thorough investigation of all outbreaks of communicable diseases and the evaluation of the correctness of our epidemiological diagnosis and administrative treatment of these diseases.

Conclusions.—1. That the administrative control of communicable diseases demands a sensitive standard for judging the relative prevalence of these diseases.

2. The endemic experience of a community with a disease furnishes the basis for construction of such a standard.

3. The endemic index, while not statistically accurate, is a practical administrative tool for the public-health official.

We have only attempted the plan in a few of the most quarantinable diseases, such as poliomyelitis, epidemic cerebrospinal meningitis, measles, scarlet fever, diphtheria, whooping cough, and so on—the ordinary epidemic diseases.

Dr. FULTON. Dr. Trask has just said that for a few States the time has come when we can make as many necessary distinctions and drop out as many unnecessary distinctions as we do in respect to mortality. I have known something about Dr. Kelley's endemic index for about a year. In Maryland we have divided the year, of course, into months according to the calendar, and we have also divided the year into 73 periods of five days each, so that with respect to time

we have a reasoned way of accounting for mortality. Besides that, Dr. Thomas has in his own office a daily account of several diseases, and especially at all times of typhoid fever. However, with the accumulation of a sufficient number of cases in the past year, it is quite possible at this time for many States, and I think for more States than Dr. Trask really supposes, to make at this time something approaching an endemic index.

We are working to that end in two ways in the State of Maryland. In the first place, for the very acute infections, which occur in large numbers, it is possible to divide the year into 73 equal parts, and to account for things like measles, scarlet fever, and diphtheria on a short-interval basis like that. But I brought with me, as another example of a real endemic index, a forecast of typhoid fever in 1917, which was made in the month of January. That is to say, we calculated the whole year's experience of 1917 in the month of January on a basis of some 10 years' experience—5 years in Maryland would be too little—so we are starting now with what some people, uninformed, call prophecy.

The year 1917 is forecast on a basis of 10 years back, with two main distinctions in the State, separating only the city of Baltimore from the counties. It is not an extremely difficult thing to do. You have to take your 10,000 or 15,000 cases—a very large number of cases; I would be afraid to say how many, now—and lay them off according to your intervals of time, and figure what might be called a morbidity coefficient on a scale of 1,000,000; so that back of this forecast is a series of tables which would be useful to the end of 1917, and will probably be useful for every year for many years to come.

I may say that this does not involve a basis which has been adopted in New York City, and which Dr. Kelley is using in Massachusetts—that of throwing out obvious epidemics. There is a necessary fallacy there unless you could equally recognize obvious minus quantities where the prevalence of disease is very, very low. If you have had a long enough experience, you need not bother at all about epidemic emergencies. In the case of the city of Baltimore we had one big spring epidemic whose influence was still felt beyond the period of five years; but, when you get to 10 or 15 years, with a disease as important as typhoid fever is, those things will equalize themselves. You need not be at all afraid. So that the complete figures, without any reservations of any kind, are used as the basis of this. We have tables of mortality and morbidity coefficients worked out, which, we think, will last five or six years. Now, having those tables before you, all that you want to do in order to establish a point is to figure the expectancy. In other words, you establish an exact equality for the year 1917 between 1917 and 1916. You can make an allowance

for the increase of population, if you like; although in typhoid fever that is not important. In this forecast it is assumed that there will be exactly as many cases and exactly as many people dead in 1917 as in 1916, and precisely the same number for the whole year, and the table shows in what months they will occur—how they will occur chronologically.

In the case of the first three months the experience is finished at this time. For instance, in January we expected 91.8 people sick and got 86. There was a gain of 5. In February we expected 61.7 sick, and we got 61. In March we expected 68.2, and we got 76. There was a little epidemic in Ellicott City at that time, enough to make some considerable disturbance; but for the three months the expectancy was 221.8 and the result 223.

This method is quite analogous to a life-insurance proposition and also to the method of crop-forecasting and things of that sort. With respect to mortality, therefore, one finds that we are ahead of our expectancy. In other words, we start the year with an advantage.

I have said that this is not prophecy. Of course it is not prophecy. It is a great mistake to think of these things as fixtures at all. It is a situation where we have diseases rising and falling with various velocities, perfectly regular, running from end to end of the year. Now, we count a year for typhoid fever—not the calendar year—like a year for wheat or for a number of other things. So that it can be said that for the first three months the figures appear very close. They are simply the mark below which, if you fall, you are making a gain upon your enemy, and whatever goes above that means your loss.

Now, a year always ends, and we end it on the 31st of December in an arbitrary fashion. You have got the impetus; we start the year with the velocity of the situation at the end of the year, so that the influence of one year, of course, carries over into another; so that when we say that our gain is seven in the mortality column we do not pat ourselves at all upon the back for that, for the reason that we wound up in 1916 with the best year that we have ever had.

Since this is the first year, I think we shall use this matter in the fashion of a forecast. It would have been, perhaps, a little better to have locked this up until the next month. However, I am sufficiently confident in it at this time to present it at this conference. I may present it next year, if you find yourselves interested, and if I find it bad enough I will not bring it back next year.

Dr. TRASK. I move that the question of working out a definite plan by means of which the existence of epidemics in localities may be determined be referred back to this committee for presentation to the next conference, with the idea, perhaps, of the conference indorsing such a plan.

(The motion was seconded and carried.)

Dr. JONES. I am very glad that the Surgeon General was so considerate as to give me a copy of the program so that I might draw up a paper on the subject assigned to me. I have no doubt that it is altogether my fault that I have not done so; but I received no official notice of the change in the date of the conference.¹

The value of morbidity reports to the State health department is in making them really a vital force in health work, instead of a depository for the records of the dead, which might be of some historical value, but not of immediate force. The reports to our bureau are of value only to the extent that we can obtain early diagnosis. If the early diagnosis is not obtained, then it is almost of as little value as the mortuary reports; and in this connection I would ask that we do everything we possibly can do to discourage the use of laboratories in the making of the diagnosis.

Take typhoid fever, for example. The real value of reports of typhoid fever to the central office or to the active health officer in the field is the certainty within the first week of the disease. If we have to wait two, three, or four weeks to obtain the report, a large number of cases could be contracted not only from the original case but also from secondary cases from the parent. Therefore we have been putting forth our efforts along the line of getting the reports of cases of continuous fever, getting the physician really to diagnose the case as we used to diagnose it, and we were not very often wrong in the conclusion where we have the continuous fever in the morning and evening, running over a period of several days. Indeed, to cover this very point, the model law suggests that we have the report of fevers that are continuous whether the diagnosis is typhoid fever or not.

The same is true in the diphtheria outbreaks. The reporting of the cases is almost of no value when delayed beyond the first 7 or 10 days. The physicians send in a specimen to be examined, and it takes from three to four days before that report is returned to the physician, or by the time he receives it. Then he is delayed in sending the report, and the outbreak has gotten a great distance along before the health officer has become active.

It seems to me that for the reports on diphtheria to be of advantage to the department, the prevalence of any sore throat should excite the physician's attention sufficiently to call it to the attention of the local health officer, and the local health officer should call it to the attention of the district officer or the deputy State health officer, representing the board, who could then make an investigation and

¹ Instead of the subject originally assigned to him, Dr. Jones therefore discussed the value of morbidity returns.

order the isolating of cases of sore throat long before the first report came back from the laboratory.

As I stated, the early reporting of the disease is of the first importance; and in order to stimulate that we have instituted the reporting of five dates to the central office. Three of these are given by the physician in the reports. The first is the date of onset; the second, the date of his first visit. I do not know whether that is used elsewhere or not. Then there is the date on which he makes his report to the local health officer. We believe that that has considerably lessened the time for reports to be received, because the local health officer must immediately send that report to the central office, and the difference in time of the fourth date—namely, the receipt by the health officer—and the fifth date, the receipt by the central office, gives us a clue as to whether the health officer is delayed or the physician has delayed in his report. Then, too, while the date of onset is of value to us merely in the epidemiological work, the date of his first visit gives us some idea as to his speed in coming to a diagnosis by the third date of his report.

I doubt very much whether our reports are going to be of value to us except we have one of two conditions developed. As I stated to you before, the importance to us is early reporting, you might say almost the early suspecting of the presence of these active diseases. The first activity depends upon the local health officer—that is, the county health officer or city health officer. These local health officers, city health officers, and county health officers, probably as a rule are not desired to be appointed by the State. The consequence is that they are not directly controlled by the State. It has certain power over them, but not a very active control. The consequence is that if we do not have the local conscience of the county or town or city sufficiently keyed up to the situation, the local health officers will blunt all-important work—not intentionally, but actually. If we do not obtain those men of that unusual caliber, of that unusual conscience, then the relief is to come through the immediate control of the State board itself, so that every one would have the conscience sensitized to the same degree, so that there would be an immediate response to the local developments.

The fourth and last statement I wish to make is concerning the central office itself. I think it is a great misfortune to have a great list of diseases to be reported to a central office when the central office is not equipped to handle the same. It does not demonstrate to the physician nor to the people the usefulness of such knowledge, and therefore they are apt to obtain the idea that the central office is requiring of them many things that are burdensome and without any obvious good. Therefore the central office ought to be equipped with its field men even though the local health officers are above the

average, because it keeps the central office in more direct touch with the actual field work.

In addition to that, these field officers ought to be so equipped that they can locally handle the material that is given them instead of its being handled in a central office. Take, for example, in the laboratories: I think every health officer locally, no matter what portion of the State he might be in, ought to have in his possession that which will give him knowledge on the subject of diphtheria, especially, and even typhoid fever.

I hope, gentlemen, that these remarks are not too amateurish; and my only excuse for offering them is that I seldom run when the gun is pointed.

RECIPROCAL NOTIFICATION.

The SURGEON GENERAL. Dr. Chesley, will you speak on reciprocal notification?

DR. CHESLEY. Mr. Chairman and gentlemen, in regard to reciprocal notification, the second page of this so-called report¹ tabulates the places from which cases of typhoid fever have been brought into Minnesota—that is, people who either came in sick or were found sick in Minnesota, who during the incubatory period of the disease were in some other State or Province. On the other side it shows the number of persons who were exposed to possible infection through the use of polluted water in Minnesota who would have no idea that they had been so exposed unless we gave the State and provincial authorities such information, that they might follow them up. In certain instances it has been found that these persons were suffering from typhoid fever, and then the State or provincial authorities had an idea of where that infection was incurred.

Since we find many cases in Minnesota each year infected outside of the State, and we know from these two instances that I have given you here, and from many others not mentioned, that there are exposures occurring in Minnesota which give rise to cases in other States and Provinces, the utility of reciprocal notification is evident. We ought to trace every case to its actual source.

The infection of the Benson water supply was an accident, one which might occur at any time.

In the case of Warroad, while you could hardly say it was intentional, it was inexcusable. The Division of Sanitation more than a year ago pointed out that this supply was polluted and made specific recommendations for safeguarding the supply. Those recommendations have never been carried into effect, although Dr. Bracken has done everything he could to persuade or compel the local authorities to take action. It may be that some of their indifference was due

¹ See p. 61.

to the fact that the local water supply reaches few of the residents of that place. It goes to the hotels and the business portion of the great metropolis of Warroad, which is only a tank stop on the Canadian line. Where the Canadian line happens to swing into Minnesota on its way to Winnipeg is this little place of contact with the ends of the Great Northern Line; but it is surprising how many people in passing through the country stop over for a short time. They have to stop 24 hours because of the trains. We found between December 20, 1916, and March 1, 1917, 425 names on the hotel registers of that place. The addresses given showed that 258 of the persons came from 69 different places in Minnesota, and that 68 others came from 11 different States and 3 Canadian Provinces. There were about 100 who gave no address, who probably had none. We get a good many of that kind that Asst. Surg. Gen. Rucker called "hoboes" yesterday, who are traveling through the country working the lumber camps, etc., and they have no permanent address. If they register at all they seldom give their correct names.

Benson is a large distributing point for farm laborers. This epidemic occurring in the months of July and August, at a time when the laborers are coming up from the South, following the harvest, we were unable to trace any of these men who did not register, and it is possible that there were a number infected through the use of that polluted water who developed typhoid possibly in the Dakotas, in Montana, in Saskatchewan, or some other place, and were never traced to the source.

If you recall what occurred in relation to typhoid in the Spanish-American War you will probably remember that Minnesota had about the worst record of any State for typhoid of the three regiments which did leave the United States. We had one-third of the men in those three regiments contract typhoid fever, and 49 of the 51 deaths occurring in those three regiments were due to typhoid fever. Those men were sent home any old way. Sometimes they were put on trains when they were delirious, and they were lost in transit. They did not turn up. Nobody knew where they came from or where they were going. They were too sick to know or care themselves, and there were all kinds of difficulties in tracing those men. It was a disgrace to the country that such a thing occurred. Now, it will never occur again with typhoid fever, but it may occur in some of these diseases that in the Northern States are new to us.

We are now going to have, not State regiments, but United States regiments, and we will have men and regiments from different parts of the country. They may go into Mexico or into Europe and be mixed up with persons infected with diseases with which some of us are not familiar; and it is of the greatest use if we can have estab-

lished at this time, in relation to the war emergency, some system of reciprocal notification. It will aid all of us in tracing these diseases, and in many instances in arriving at a correct diagnosis; and then possibly in States like Minnesota, where we are not familiar with tropical diseases, we may early secure the assistance of the experts of the Public Health Service who are familiar with all the measures to prevent the spread of those diseases. It is for this purpose that Dr. Trask wished this point brought up.

In the acute diseases, the information forwarded to the State officers sometimes is of great value. Sometimes it is of practically no value. On tuberculosis it is merely a matter of encouraging the reporting of this disease. We have to use our discretion, within Minnesota, in referring cases of tuberculosis released from sanitariums to the local health officers. There are certain places where I would not think of giving the local health officer the report on some persons discharged as a closed case from a sanitarium, because I happen to know the man, and I know that he will probably tell everybody in the community, and the result will be that a person who is now actually safe, as the physician at the sanitarium reports, from the physical condition, and practically because of the training he has had in the care of his sputum, etc., may be unable to secure employment, or may be put to all sorts of unnecessary inconvenience. So we have to use our judgment within the State on matters of tuberculosis. I do not know how the cases of tuberculosis referred to other States from Minnesota have been treated, but since the reports go to the State officials we have no apprehension on that point. We know that the State officials will use discretion in those matters, and in reporting directly from one State to another State or from a State to a Province or vice versa, you are dealing with people with whom you are more or less familiar, and you know that they are not going to do what the local health officer sometimes does—say something or do something that will react on the individual and bring a lot of unnecessary trouble on him with no benefit to the public. That is the possible disadvantage of this reciprocal notification. It is similar to the travel permits in poliomyelitis, but, of course, for quite a different purpose in the routine work.

THE SURGEON GENERAL. Dr. Trask, will you close the discussion?

DR. TRASK. It is a question whether the conference wishes to decide definitely upon some form of reciprocal notification at this annual conference or whether it wishes to hold it under consideration and formulate a definite plan for presentation and adoption at the next annual conference. I think before we leave the question the conference should express itself as to adoption at this conference or at the next.

If it is the desire to adopt some plan at this conference, it might be well to refer the matter to the committee of which Dr. Chesley is chairman to draft and present later in the day some definite, concrete plan which the conference can adopt.

Dr. DALTON. Mr. Chairman, I feel that this matter of reciprocal reports just now is a very important one and ought not to be laid over for a year, especially with regard to these new diseases which Dr. Chesley has mentioned and which we in the North may run into at any time and may not know. Therefore, I move that Dr. Chesley be requested to make some report whereby reciprocal reports of disease can be instituted at once, to report at some time during the session, to-night or late this afternoon.

(The motion was seconded.)

Dr. BLACK. I should like to make the suggestion that when this is considered it include not only infection of actual diseases coming from or going to another State, but also the prevalence of disease at or near the borders of other States.

(The motion was carried.)

STANDARD MORBIDITY TABLES.

The SURGEON GENERAL. Dr. Trask, does that finish the subject?

Dr. TRASK. That finishes the immediate matter under discussion. There is one other point that the committee wanted to bring out. It will take just a moment. It is the question of standard morbidity tables.

There is no need of pointing out to a conference of trained public-health workers, such as this, that the purpose of a health department is to maintain the population, in so far as possible, in a condition of physical well-being or, what amounts to the same thing, to prevent the occurrence of disease. Nor is it necessary to explain that either to maintain the health of the population or to prevent the further occurrence or spread of disease the places in which cases of disease are occurring and the conditions under which they occur must be known and investigated; and that, further, not only must the places and conditions where disease is occurring be known but the times of the year when disease is most prevalent and the sex and age, as well as the occupations, of those most frequently attacked must also be known.

In localities having satisfactory registration of deaths, health officers have in the past been in the habit of studying these things as regards cases of disease which happen to terminate fatally. There has usually been no similar study of the far more numerous cases which terminate in recovery. Study has been limited to the fatal cases because there were usually available what were believed to be

fairly dependable data regarding the deaths while similar data regarding the nonfatal cases were supposed to be, and usually were, less complete. For the purposes of the health department the study of fatal cases only has always been recognized to be at best a half-way measure. The health officer and the epidemiologist have studied mortality because of whatever value it possessed as an index of the prevalence of morbidity. While the life insurance company is naturally interested in the frequency of death, the health officer and the sickness insurance company are interested in the frequency of disease. Disease is represented by the cases and is as prevalent as the cases, and nothing short of a study of all cases will ever be satisfactory to the epidemiologist, nor will anything less than a study of all the known cases give to the health department the information it should have in order to attain a reasonable efficiency.

At the present time many municipalities and a number of States are getting reports of a considerable proportion of their cases of certain diseases. The time has come, therefore, when the health departments of these municipalities and States may begin to study intelligently and carefully the actual prevalence and distribution of these diseases in their respective territories.

While realizing that the mortality data represented only the relatively small proportion of cases which by chance were fatal, these data have in the past been carefully analyzed to get all the possible information they would yield of the prevalence of disease. They have been studied by sex distribution, by age distribution, by geographic distribution, by chronological distribution, and by occupational distribution. Wherever reasonably complete data of cases are available, an intelligent health department will study at least as carefully and as minutely the distribution of disease as shown by the occurrence of cases. In fact, the cases would warrant a more extensive study by the health department, for the cases represent the thing being studied, and are not merely an index of the prevalence of the thing. Statistically the detailed analysis of cases, as a study of disease prevalence and distribution, rests upon a much sounder basis than the study of deaths by causes.

This conference has a distinct advantage in approaching the subject, because it is entering upon what is practically a virgin field. The opportunity exists for uniform and concerted action, and it is with this in view that your committee has recommended certain morbidity tables to be adopted as a minimum standard for inclusion in annual reports of health departments. These requirements call for data of cases, giving their distribution geographically, chronologically, and by age, sex, and occupation. Wherever cases are reported and recorded these data should be available, and undoubtedly are, so that it will not require any change whatsoever in the form of

notification or of records. It constitutes merely the publication of more of the data collected and reported.

The cumulative information which will be made available by the adoption of these tables and their publication in annual reports will be of the greatest value. I think that the value of these data can not even be appreciated at the present time, because we have been accustomed to going without them.

The SURGEON GENERAL. Doctor, do you make that in the form of a motion?

Dr. TRASK. I will make it a motion.

(The motion was seconded and carried.)

REPORT OF COMMITTEE ON SANITATION OF PUBLIC CONVEYANCES.

Dr. DOWLING. Mr. Chairman and gentlemen, in the first notice I had of the advancement of this meeting I had not received the personnel of the committee. I was in the country and did not return until the day before starting here, and for that reason I have not had an opportunity of conferring with the committee. Hence, this report is submitted as my own, subject to the approval of the committee. It may be possible that I will make references to some work in the South which they would probably want to strike out a part of or, as far as possible, make it applicable to the entire country.

GENTLEMEN: Your committee begs to report that observation and investigation show great advance in railway sanitation. Things done are proof; greater prospective progress makes it even more evident.

Among improvements noted are:

1. Many new railroad stations.
2. Building of sanitary closets in places where there is no sewer system.
3. Improvements in ventilation of dining-car kitchens.
4. Use of certified water and ice.
5. Improved service in the cleaning of stations and cars.
6. Increased vigilance in regard to infectious diseases.
7. Experimental work among members of camps and crews for the control of malaria and typhoid fever.
8. Effort toward the instruction of employees in the essentials of health protection.

That the public may have increased comfort, various railroads have been most generous in providing new buildings or in the repair of old ones. In very many small towns the companies have responded to the recommendations of boards of health and have built fly-proof closets.

The water supply in almost every train is good and safe, due to efforts jointly of the United States Public Health Service, the railroad companies, and State boards of health. Perhaps no one thing that has been done recently has been more helpful in educating the public in the necessity for wholesome water and the examination of water supplies.

There has been great improvement in the supervision of the cleansing of cars and stations. Vigilance is the price of cleanliness, and it is a notable fact that many of the stations of small towns are kept in good condition while those

in cities are disgracefully insanitary. It is to be expected that greater effort is required to keep the large stations in good condition, but it should be understood and the station master made to feel his responsibility. For a union or terminal station in a large city to be in such condition has a detrimental effect on the public mind. In this there is yet much to be desired.

Since the method of transmission of infectious diseases has become more widely understood, the public is more appreciative of the interest the railroad companies take in the control of the spread of infection by persons suffering from these diseases. Among physicians and others in charge of this work there is a growing conviction that this control is largely a question of the cleansing of the cars, and since this is done more effectively than in former years, greater protection of the public is already guaranteed.

Putting in the hands of the employees leaflets instructing them in the principles of hygiene and sanitation is a most encouraging development. The railroad station is a good school; it is a point of dissemination of information, and whatever the railroads can do to help in the instruction of rural communities, as well as in the larger units, is greatly to the benefit of public health. Simple explanations of why, for example, fly-proof closets are conducive to the healthfulness of a community, why samples of water should be sent at regular intervals, and why water barrels and tanks should be screened, have had a salutary effect in many of the rural districts.

Dr. A. C. Campbell, sanitarian of the Illinois Central Railroad, conducted an experiment in the Yazoo Delta which was of great interest and importance. Twenty-one miles of the double track in the Yazoo being washed out, the Illinois Central Railway rebuilt it with crews not one of whom developed malaria. At another point on the Mississippi River where 2,000 laborers were employed typhoid fever broke out. All the members of the force were vaccinated and not another case developed. Further prophylactic experiments have been made among track crews and bridge gangs of the Illinois Central and Cotton Belt working in malarial districts. These men have been given quinine during the mosquito season and this method has reduced malaria 90 per cent.

Undoubtedly sanitary shortcomings as yet are many. In the winter the temperature in sleeping cars and other coaches is almost universally too high, the reason being that the principle of ventilation is not widely understood. It is known that to be comfortable a car does not require such a great inflow of outside air, but that movement of the air is imperative. This principle can be practically applied. The lighting of many cars is not conducive to comfort. This can be easily remedied. While improvement has been made in some dining cars, care in the storage of food is not yet as conscientious as it should be. On small branch lines of many railroads the regulations concerning cleaning of cars are not known or no attention is paid to them. Water coolers are not properly cleansed and many of the cars are swept without wet sawdust or paper.

One of the problems of the South is the screened car. Several of the health officers of the Southern States are inclined to make this a demand. It has always seemed to me that on this subject the odds are even. If cars are screened, the mosquitoes will get in and they can not get out. If unscreened, when the cars begin to move, within a short time the mosquitoes make their escape. I am sure many of you have had the experience of getting into a sleeping car and finding it filled with mosquitoes, and, there being no exit, they had to be endured during the entire night. On the other hand, in the day coaches, once in motion, the mosquitoes seem to find means of escape through the windows.

Perhaps the most important and the problem hardest to solve in railway sanitation is the proper disposal of track pollution. Two things in connection with this may mean danger—discharges may be washed from the track into bodies of water which are used for drinking purposes or the matter dry and become pulverized. Where track drainage is into domestic reservoirs and this condition does obtain in some places, the first of these dangers is real. It is therefore imperative that the railroads should investigate and, where reservoirs are near the line of drainage, track contamination should not be permitted. As railway tracks are so exposed to sunlight, and sunlight is destructive of the disease-producing bacteria, track pollution in places other than where it may drain into the reservoirs is not inimical to public health.

I might say that we have been trying to make experiments with the four cars that we operate. We have had our sanitarians in there working on this, and the best plan we have worked out is to have the toilets empty into a tank or reservoir and then from that the matter flows by gravity into another tank that is filled with charcoal and gravel. Then from that this liquid matter after filtration falls into another tank, that can be opened at accessible points and drained. Of course, if the car is stopped in a city, it can be drained into a sewer, if there is a sewage connection beneath; but it has not worked out so that it can be pronounced satisfactory, for the reason that it is cumbersome, too heavy to be carried, and then there is a great deal of difficulty in protecting the back flow from these tanks. It is exceedingly difficult, with the small space in which we have to work, to make this satisfactory.

There can be no doubt but that progress in railroad sanitation has been most marked within the past five years. Equally should there be no interruption of the present plans for further effort; it is clear that greater advance will be made, and quickly. But in the event that the railroads should be called upon to transport large numbers of troops it would be difficult for the officials to maintain present conditions. Therefore should it become apparent that these facilities will be taxed to their limit for transportation of largely increased numbers, preliminary sanitary precautions should be taken. While this may not seem practicable, and might not be to a very great extent, forethought and effort would give some results.

Your committee has only one resolution to offer:

Whereas since in several States along the border and a few of those in the interior typhus fever has developed; and

Whereas the scarcity of labor in the United States at present and the prospect that this condition will become even more acute increases the possibility of the employment of many Mexican laborers: Therefore be it

Resolved. That the railroad companies which have terminals in the southeastern and the southwestern parts of the United States are hereby given thanks for the assistance given the State health officers to prevent the introduction of this disease; and that it be further •

Resolved. That these railroad companies be asked to continue their vigilance and that other lines which have not yet become interested likewise be requested to put into effect similar measures for the prevention of the introduction of this disease into this country.

OSCAR DOWLING.

THE SURGEON GENERAL. The report of the committee is before you. Is there any discussion?

DR. LUMSDEN. Mr. Chairman, there are one or two points in the committee's report in which I was very much interested. I should be glad if Dr. Dowling would tell us how extensive the outbreak of typhoid fever at this railroad camp was. The report stated that they used typhoid vaccine, and that no further cases occurred. It would seem that the result, perhaps, was due entirely to the use of vaccine; but the fact that no cases occurred in the incubation period between the occurrence of the last case and the protection or the possible protection given by the vaccine would suggest that there was an element of good luck also.

Another point that I understood the chairman of the committee to present was that track pollution, except on the watersheds of public water supplies or other water supplies, was not inimical to public health. Did I understand the chairman correctly?

DR. DOWLING. I said because the matter was subject to the action of sunlight, and that if properly drained away the sun destroyed the germs.

DR. LUMSDEN. I just wanted to be sure that I understood correctly the report which you had read. I was not sure.

I think we should adopt that with some reservation. I think most of us will be able to discover, if we are somewhat observant, along the track in the villages at which all trains do not stop or slow down, that often—not very often, but I know that in my experience I have observed on a good many occasions—there was evidence of very gross pollution of the track. Any of you who have seen children playing base ball, and licking the fingers before throwing the curved ball, will realize, I think, that track pollution might sometimes be inimical to public health.

THE SURGEON GENERAL. Is there any further discussion? If not we will have now the report on interstate quarantine regulations. Dr. Fulton.

REPORT OF COMMITTEE ON INTERSTATE QUARANTINE REGULATIONS.

(Dr. Fulton read the following report:)

APRIL 27, 1917.

To the chairman of the Fifteenth Annual Conference of State and Territorial Health Authorities with the United States Public Health Service:

SIR: The committee on interstate quarantine regulations, appointed at the last annual conference, reports the following:

During the year three amendments to the existing Interstate Quarantine Regulations have been promulgated. Section 13 was so amended as to provide that only water for drinking and culinary purposes should be certified by the proper health authority in the manner indicated, and that this provision should

apply not only to common carriers but to persons, firms, and corporations engaged in interstate traffic, the certificates to be executed semiannually, or as often as the Surgeon General of the United States Public Health Service shall direct, the latter provision being necessary in order to properly deal with contaminated supplies. The section was further amended so that the requirements should apply to vessels plying between foreign ports on or near the frontiers of the United States, and adjacent ports in the United States, in accordance with article 4, Foreign Quarantine Regulations, this being done in order to include in its provisions vessels navigating the Great Lakes between Canadian and United States ports.

Section 14 was amended in such a manner as to apply not only to common carriers but to persons, firms, and corporations engaging in interstate traffic, this amendment being necessary on account of the fact that many owners of freight and other vessels contended that they were not common carriers.

The provisions of section 18 as amended provide that not only shall parents or guardians not allow any minor or other person under their charge who is in the communicable stages of any of the diseases mentioned in section 1 to procure transportation, but that no physician, nurse, or other person shall allow or procure such transportation. The reason for this modification is obvious.

In addition to these three amendments two other sections have been promulgated. Section 37 provides that persons, firms, or corporations maintaining camps of migratory workers shall at all times maintain such camps in a proper sanitary and vermin-free condition and shall take such other precautions as shall prevent the interstate spread of disease from such camps, and that the Surgeon General of the United States Public Health Service may detail officers or employees to make such inspections as shall be necessary for the enforcement of the regulation. This section was made necessary by the typhus situation, and was aimed directly at railway and laboring camps where insanitary conditions favoring the development of that disease prevailed.

The final regulation, section 38, relates to the shellfish industry and provides that after notification in writing by the proper health authorities common carriers shall not transport or accept for transportation, nor shall any person, firm, or corporation offer for transportation in interstate traffic, any oysters, clams, or other shellfish which have been grown, fattened, or handled in such a way as to render them liable to become agents in the interstate spread of disease, and that the Surgeon General of the United States Public Health Service shall cause sanitary inspections to be made of beds used for growing or fattening shellfish and of places where these products are prepared for interstate shipment, to the end that such transportation may be prohibited.

In reference to the progress made in the certification of water supplies, based upon the cooperative effort of State and municipal authorities with the Public Health Service, the conference is informed that this procedure is on a more satisfactory basis than at any time since it was instituted. There has been a material reduction in the number of supplies used by common carriers, as well as a marked increase in the proportion of supplies certified. During the year the Public Health Service has bought and equipped the laboratory car Wyman, at a cost of approximately \$15,000, for the purpose of assisting in the certification of those supplies which for any reason can not be handled by the State authorities. The car is fully equipped for laboratory work and is provided with a personnel of one medical officer, one sanitary engineer, one clerk, and two attendants.

JOHN S. FULTON.

Dr. RUCKER. Going into a little further explanation, and in order that this may be clearer to you, there are two or three important points with regard to the amendment of section 13. One is that it now takes into account the potentiality of a water supply, and that is something that has not been in the regulations heretofore.

In the second place, that it requires a sanitary survey.

In the third place, it is so amended that certificates do not have to come in every six months, as heretofore. The Surgeon General may require that they come in from a given source, which is a dangerous source, every three months, or if it is a source in which the potentialities of infection are exceedingly light he may require that they come in only once in two years.

The last section, making this apply to vessels sailing between ports in Canada and ports of the United States, is so that there shall not be any discrimination against American vessels and in favor of Canadian vessels. It may be said that this matter has been taken up with the Canadian authorities, and they have agreed that next year they will promulgate as their regulations these regulations, so that we will have on both sides of the Great Lakes the same set of regulations.

The amendment of section 14 was made necessary by the fact that on the Great Lakes, particularly, certain of the carriers were not common carriers. The situation is this: A corporation would own a mine. They would also own a vessel. They would then take the product of the mine and they would ship it in their vessel. They would take it to a point and bring back finished material which had been worked up in their own rolling mills. Then they would go back again. In other words, they were not common carriers; so that it was necessary to make that change so that it would fit everybody.

Section 18 was made necessary by reason of a case that was reported by Dr. Crumbine. It seemed that, in violation of the regulations then existing, a man was taken by a health officer and put on a train and sent down to some point, where he infected some member of his family, who afterwards died. We took this matter up to see if there was no way that we could get action against this man, and we found that we were unable to do that, and so this change was made in a way that we believe will prevent such cases.

The question of the sanitation of camps occupied by migratory workers is covered by section 37. This was brought to the attention of the conference of two years ago by Dr. Tuttle, and the board has had the matter under consideration; but it was only relatively recently that we were able to figure out a way to handle this. This gives a regulation which permits health officers who are empowered by law to enforce these regulations a very good means of handling

the question of these railway camps, and lumber camps, and camps of migratory workers, something that has been a very great thorn in the sides of the State health officers heretofore.

The last one has to do with the prohibition of the interstate shipment of oysters and clams grown or handled under insanitary conditions. This is made necessary by the fact that the Department of Agriculture can not handle this matter under their law excepting by confiscation and destruction of the oysters and clams. This takes into account the environment in which they are handled and prepared before shipment; and in that way it can be handled without levying upon the property. It also is a regulation which you are empowered by law to enforce.

Dr. TUTTLE. Mr. Chairman, in regard to this regulation which refers to changing the water supply and examination problems, we have had that under consideration in Washington considerably and have worried about it considerably. I say "we" because it was your representatives we worked with. They were doing the work.

Neither Dr. Lloyd nor myself feel that it is proper or right to accept a sample of water collected by any Tom, Dick, or Harry and sent into the office and declare that to be a good water—assuming that it is the water used on a railroad—when we do not know anything about it; so that we have insisted that we collect our own samples, or send somebody after them. We sent in one instance an engineer located in the State of Washington for certain samples of water supplies. We found that some of them were open to contamination and others were absolutely free from contamination. It is absurd to examine these supplies that are found free from contamination with the same frequency as we examine those that are open to contamination, and yet in which possibly we did not find the evidence at the time we took the samples. In other words, it would seem that sometimes it would be much better to conduct a sanitary survey in accordance with what the actual conditions show must eventually happen, because if it is not contaminated to-day, we know very well that it will be to-morrow, though which particular to-morrow we might not be able to put our finger on. There may be an epidemic, and we may not have a sample taken when the contamination started. Then take a water supply like that of the city of Spokane, a well 100 feet deep, sealed up. That water supply is examined by the city every day, and why should we make an examination of it?

This railroad camp problem is a problem that interests us all throughout the West, as it does you, undoubtedly, throughout a good deal of the East. You will have a lot of railroad contractors working along on your railroad and running a very insanitary camp.

The result is a spread of disease to trains. This is a very helpful regulation when you have many of those camps to deal with.

There was a question I wanted to ask the Surgeon General, namely, in regard to enforcing these regulations. We may find, as we have frequently found, a man traveling on a train and deliberately getting on the train suffering from disease. I found a doctor on a train with his child suffering from scarlet fever last year. In what court should a complaint, based on the regulations of the Federal Department of Health, be filed? Should it be filed under State law or under Federal law?

THE SURGEON GENERAL. In the Federal court, Doctor.

MR. WHITTAKER. I would just like to say a word corroborating what Dr. Tuttle has said. In the investigation of 600 water supplies in Minnesota, of which 60 per cent were insanitary, the analyses of these 60 per cent that we found to be insanitary showed that 52 per cent were found insanitary from both the field survey and the analytical results; 40 per cent were found to be insanitary from field results alone. In 8 per cent of the cases the supplies were found to be insanitary on account of the analytical results alone; that is, the field examinations did not show that the supply was insanitary at that time. I simply wanted to bring out this point to show that there might be a discovery of approximately 40 per cent from field examination alone.

DR. DOWLING. I would like to ask, in section 14 of the Quarantine Regulations, where it says "no person, firm, or corporation engaged in interstate traffic shall maintain or permit to be maintained," etc.; as I understand it, the railroad commission held that although a railroad may be an intrastate road, if they allowed a passenger from outside of the State to buy a ticket that goes over the State line, or a passenger from out of the State to go into another State, the effect is that they are an interstate carrier. If that is true, would not this really apply to the hotels and post offices throughout the country?

DR. RUCKER. It has been held that a hotel and a post office are not methods of transportation and are not engaged in commerce between States, and therefore that would not hold. It has even been thought that it was extremely doubtful if the regulation which requires the cleanliness of railway stations was really fully backed up by the law.

DR. DOWLING. There is some ground for considering that a method of transportation. You take a train to-day, and you may get into an insanitary hotel where you might contract a disease, and then pass on to another place; and I was in hopes it would apply to that, and especially the post office, because if we could have a good water supply and proper sewage disposal at the post office, it would be one of the greatest blessings. Those among you who have gone into the rural communities know the condition in which the post office often is.

Dr. TUTTLE. Under whose jurisdiction is the post office: is it under Federal jurisdiction or State jurisdiction? I ask that because this year I quarantined a house in which a post office was located, for scarlet fever, and I was very much in doubt as to whether I could keep it quarantined or not, because I thought I might get into trouble with Uncle Sam. They told me it was Federal property, and I had no right to shut that up.

The SURGEON GENERAL. The transportation of the post office is under Federal authority.

Dr. TUTTLE. Here is a post office, for example, in a man's house, and he has scarlet fever in his house.

Dr. McCORMACK. Of course, the police power of the State would apply to the individuals in the house, even if the owner was an officer of the Government. If there was smallpox or scarlet fever there, it would come under the jurisdiction of the local health authorities, and he would be subject to their regulations and to their police authority to prevent the spread of the disease, and they could quarantine the place. We have quarantined the post office frequently. They have tried to keep us from doing it.

Dr. CRUMBINE. I would like to ask whether or not these regulations that have been passed are enforceable under penalty, and whether or not violators can be tried in a court under penalty?

The SURGEON GENERAL. Dr. Rucker's report is what we are discussing.

Dr. RUCKER. In answer to Dr. Crumbine's question, I would state that no cases have been brought in the courts this year. We have endeavored in the cases Dr. Crumbine reported to us to secure action in the courts, but upon advice of the Attorney General we did not take the cases into the courts, because he held that as it was worded this person was not included, that he was exempt from the regulation. It was necessary to change the regulation in order that it would catch the next one who was reported. There has not been any next one reported, so that nothing has been done. There is a penalty for the infraction of any interstate quarantine regulation, provided by law—by two separate laws.

QUESTION OF TRACHOMA.

Dr. McCORMACK. You are probably not ready for action at this time, but I would like to ask the conference to be considering the problem which Kentucky presents to the Nation in regard to trachoma. We have about 60,000 cases of native trachoma in Kentucky. About three weeks ago, going to Indiana, I saw one family of about 11 cases crossing the State line. The pressure of a strong quarantine would be very effective on the local health authorities in

Kentucky, and it would not only assist us but it would be of material assistance in preventing its spread into other jurisdictions. We are taking efficient steps to prevent its spread into the United States from other countries. The work that the service has done in Kentucky I really consider one of the most wonderful pieces of actual health work that has ever been accomplished in any work anywhere. More than 1,000 cases of trachoma are being treated and cured each month in Kentucky, now. All the cases are cured that are treated immediately. Come up and see us. Dr. McMullen is ready to administer the treatment any time. I saw 31 cases operated and cured in my town last Saturday. Any man who is familiar with diseases of the eye, and does not know that trachoma can be cured in one treatment, ought to come to Kentucky and see it, because he needs the information, and we are prepared to give it to him.

That is a situation that confronts Kentucky. Trachoma is the most frequent cause of blindness. Nineteen thousand cases were treated in Kentucky, Tennessee, West Virginia, and Virginia last year at a cost of less than \$40,000. It is the most economical thing that the United States Government has ever done. From five different poorhouses Dr. McMullen has removed every single citizen in the poorhouse by his treatment of trachoma cases. In Muhlenberg County he treated cases that had been in from three to nine years. They are all out. What I would like to do is to impress on the conference the character of the work done in Kentucky and the service it is doing. It is in the pauper section, that is not able to do it for themselves; and regardless of that, the situation that confronts that region of the country is a practical situation, and it is a question whether you want to have those cases amongst you or not. Those people are going into other States with their trachoma, and I am sure it is a matter of the very greatest importance. We have the history of case after case where one case of trachoma has come into a community and inside of one year there would be 10 cases and in five years there would be 35 or 40 cases in the community in which that child has been. While it is slow in developing, it is a very dangerous disease, and I would like to ask the conference to consider carefully the advisability of beginning steps toward quarantining against people coming in from trachoma regions.

Dr. DOWLING. I would like to ask the doctor where he found these cases that he speaks of?

Dr. McCORMACK. On the train; I did not count the ones that did not have it. I did not take the census at that particular time.

Dr. DOWLING. If they have a treatment that is a certain cure for that, why not treat them and let them go on, if they treat them in a day?

Dr. HAYNE. What criterion is used to determine whether these people are actually suffering with trachoma? I have had some experience with trachoma, and it seems to be somewhat hard to cure.

Dr. McCORMACK. That is true. Trachoma is a very difficult disease to cure, and Dr. Knapp and other authorities of the country have said it takes from six months to two years to treat it. That is because he did not have the method of Dr. McMullen. With the method used there I saw 165 cases operated on in one month, and the county health officer and the county health nurse have kept those cases under observation since and have reported at six months' intervals. All that remain in the county are cured. Following the operation they received, occasionally, treatment. I should say possibly two-thirds of them had applications made to their eyes two or three times of an emollient by the nurse. Most of them had the drops dropped in their eyes by the family and had practically no treatment by any expert, and we are rapidly coming to the point where we are perfectly well satisfied that if the operation is done and the patient is kept under observation for 24 hours the case is cured. We would be delighted to have you come down, any of you, and actually see the thing. I know how difficult it is for as excellent a physician as Dr. Dowling, who has failed in the treatment of trachoma for a long period of years, to believe that some one else has accomplished what he could not accomplish, and I would like to tell you how good Dr. Dowling is, but until he sees this done and until all of you see it do not say it is not a fact, because you have not a right to say it until you see it. There are thousands of cases that have been cured.

The treatment is so simple that any of you who have not had experience in the treatment of diseases of the eye can do it, and Dr. Hayne and Dr. Dowling, who have had experience, can become experts immediately.

The patients are given a general anæsthetic when they are children and are nervous enough to require it or a local anæsthetic in the case of adults and others. The lids are inverted and a horn protector is put over the eye. With a sharp scalpel Dr. McMullen makes a few very rough and superficial incisions into the trachomatous area, and with a fairly stiff brush dipped in 1 to 1,000 bichloride solution he breaks up the granules. Wrapping a piece of gauze around his finger, he dips it in this solution and with his finger rubs all the trachomatous granules away. The efficacy of the treatment is known the next day by the extent of the reaction. If the eye is swelled up and black and heavy, you have not got rid of all of the trachomatous granules. If it is in a rather better condition, so far as inflammation is concerned, than it was the day before the operation, the case is a cured case. Those patients frequently go back for treatment, and when they do they get a drop or two drops of ——— dropped in

the eye. I have seen the operation many hundreds of times. In the older cases they require a longer time, and they require repeated operations in order to keep them healthy.

Dr. KERR. We have rather considerable studies of trachoma prevalence along the eastern slope of the Appalachian Mountains in North Carolina and South Carolina, and into Georgia, and, I think, in Northern Alabama, and there has been a practically small—practically insignificant—number of cases in those areas. It is well known that the disease does prevail in southern Ohio and Indiana and, to a greater extent, in Illinois, and presumably that might have been spread from the Appalachian Mountains, but up until 1912 or 1913, I think, none of us knew the prevalence of this disease and the problem which confronted the country as a whole. We thought it was an exotic disease, whereas, as a matter of fact, it is very widespread throughout the country and very prevalent, indeed, throughout the country, notably in Oklahoma.

As to treatment, Dr. McCormack has referred to Dr. McMullen's results with trachoma. I have been there and seen some of his cases, and know the work that is going on, and while I am not quite as sanguine as Dr. McCormack I know that Dr. McMullen has obtained very substantial results, indeed, results that have been a surprise to him and a surprise to me; and to make sure that we were not deluding ourselves, we have had representative members of the ophthalmologic section of the American Medical Society, Dr. Parke Lewis, Dr. Harlan, and others, go into the mountains for the purpose of seeing this work and the extent of the cure. He is getting cures. I have treated the cases, or attempted to treat the cases, and get results at Ellis Island in the past two years, and I know how difficult it is to cure, and I know what the conditions are that Dr. Hayne and Dr. Dowling have met, but for some reason the problem of the progress of the disease is more hopeful among the people of the mountains than it is among the immigrants. The treatment Dr. McMullen now uses is the Klotz method, and those who have never seen Dr. Klotz's method or have never used it themselves have no idea of its radical character, as compared with ordinary treatment of trachoma. I thought I was rough enough, or radical enough, but this operation goes away beyond that. Now, it controls the disease. The disease is widespread. It is exceedingly chronic and to talk of putting on a quarantine of these cases, it seems to me it would be a task so stupendous as to make it impracticable, but I think certainly a committee should be appointed to consider trachoma, and to see what all the States should do to institute measures of control. If I am right, I would like to recommend to the conference a committee on trachoma, to be appointed for the purpose of considering the disease and what steps should be taken, principally in the way of treatment for its control, by State authorities.

Dr. KELLEY. Mr. Chairman, I would like to second that motion, if that is made as a motion.

Dr. KERR. I would be glad to make it as a motion.

Dr. KELLEY. And I would like to ask whether the question of trachoma is distinct from quarantine regulations—if it comes up in any other way?

The SURGEON GENERAL. I do not think it does.

Dr. KELLEY. Then I would like to add, in seconding this motion, a suggestion that one feature that ought to be considered by this committee is the education of American ophthalmologists in particular, and of the American medical profession in general, as to the existence of this disease, and the widespread prevalence of native trachoma.

I hope, also, that the time will come when we will have in the State of Massachusetts some similar studies among our recently immigrated population as to the possibility of unsuspected existence of trachoma. This subject has been taken up with members of the service, and physicians have not been able to agree up to this time. I think we will find the most astonishing ideas prevailing among ophthalmologists and physicians generally in regard to it. I have had a number of instances of men who had no idea of the existence of trachoma in the South, or who Dr. McMullen was, or that any hospital treatment of it was carried on under the service; and I am not speaking of poorly informed practitioners, but of eminent specialists, who were under the impression that, so far as trachoma affected the United States of America, it was merely through the slipping into the country of immigrants from Egypt and southern European countries who were affected with trachoma. I think that is the situation—that our ophthalmologists have a very vague idea as to the existence of trachoma.

Dr. BRACKEN. While Dr. Kelley is suggesting education, I would suggest that they educate the Indian Bureau in particular.

The SURGEON GENERAL. You have heard the suggestion, that a committee be appointed to consider the subject of trachoma.

(The motion was seconded, and, the question being taken, the motion was agreed to.)

Is there any further discussion of that report? If not, we will call for the report on intrastate quarantine regulations. Dr. Garrison.

REPORTS OF COMMITTEES—Continued.

INTRASTATE QUARANTINE REGULATIONS.

Dr. GARRISON. As the committee has had no time or opportunity to confer about this matter, Dr. Rucker very kindly wrote just a short report, which I will read:

MAY 1, 1917.

The committee on intrastate quarantine regulations has the honor to report that since the last annual conference your committee has had but little opportunity to consider the formulation of a model code of intrastate quarantine regulations. It would seem that this undertaking is one of considerable proportions, necessitating the expenditure of considerable time and effort.

The SURGEON GENERAL. The report of the committee is before the conference.

If there is no discussion, we will go on to the next report, on health insurance. Dr. Woodward.

REPORT OF COMMITTEE ON HEALTH INSURANCE.

(Dr. Woodward read the following report:)

At the last meeting of this conference your committee called attention to the vital importance of coordinating health conservation through established State health-conservation agencies with any system of sickness insurance that might be established under Government authority. While the necessity for such coordination and the advantages of it seemed to your committee perfectly clear, yet opposition has manifested itself among certain groups of persons who are advocating governmental sickness insurance.

This attitude of opposition is maintained notwithstanding the desire to maintain for the projected system of sickness insurance the designation of "health insurance." It seems worth while, therefore, to point out to this conference what seems to your committee the essential difference between "sickness insurance" and "health insurance," so that health officers generally may use the two phrases with due discrimination, and in expressing their belief in the desirability of either one system or the other be able to state their position clearly and beyond the possibility of misunderstanding.

By "sickness insurance" your committee understands a system of insurance that is designed to provide for the insured and for his family the necessities of life, including medical, nursing, and hospital services, under appropriate conditions, after the insured has become ill or been disabled. Until he has become ill or disabled, benefits under this system of insurance do not begin to accrue, and when he recovers benefits cease.

It will be observed that under this system of insurance the only additional inducement for the worker to make any special effort to keep himself well lies in the required weekly payments, which form an almost negligible part of his compensation. The benefits he receives in cases of illness are based not only upon this weekly contribution from the worker but upon contributions from the employer and from the Government, and the actual benefits the worker receives are certain to be out of proportion to his particular part of the contributions to the fund. It might fairly be said, therefore, that insurance against sickness, or "sickness insurance," using that term as defined above, would offer little, if any, additional incentive to the insured to prevent sickness.

"Health insurance" conveys to the minds of your committee an entirely different meaning, and should be reserved exclusively for the expression of that meaning. The phrase "health insurance" clearly means a variety of insurance that tends to insure the continuance of health. It should not be used to describe a system of insurance that pays benefits only in event of the loss of health, notwithstanding any supposed analogy to the phrase "life insurance."

It will be noted that the projects heretofore presented for "sickness in-

surance" may create a possible financial incentive for disease prevention, but they carry with them no definite provisions for measures designed to prevent sickness and insure health. This statement is made notwithstanding the fact that pending legislation does contain provisions that certain health officials shall be placed on boards connected with the "sickness insurance" scheme. They form an entirely negligible part of such boards, and their functions as thus far laid down are purely advisory. The boards upon which it is proposed that these health officers shall serve have no machinery for enforcing health conservation, nor are the activities of such boards connected, except through this feeble link in the advisory scheme, with existing agencies for health conservation.

It is better, it seems to your committee, that boards charged with the administration of sickness benefit insurance projects should not be vested with powers looking toward the conservation of health, since the clothing of such boards with powers of that character would tend to bring them into competition or controversy with the established health agencies. Moreover, it would be a duplication of health conservation agencies that would be expensive and tend for inefficiency.

The establishment of sickness insurance agencies under the designation of health insurance agencies, or upon the basis that they are in fact health agencies, will tend to limit the efficiency of existing health conservation agencies to which they relate. The large appropriations that must be asked annually in the name of "health insurance," and the additional expenditures that would have to be made for the administration of the system, would tend to create in the minds of legislators and other people the belief that such expenditures were being made for the conservation of the health of the entire community, whereas such expenditures would be as a matter of fact expenditures for relief and not for health conservation, and should be charged in the relief budget rather than in the health-conservation budget.

In the minds of your committee no sickness insurance scheme should be approved by this conference or any public health officer under the guise of a health insurance measure. Health-insurance measures—that is, measures looking definitely toward the conservation of health—are approved by this committee, and it is hoped that every State health agency will approve them, but only on condition that they provide definitely some scheme for health conservation to be administered by established health agencies. If health agencies now existing are not regarded as adequate to the ends named it is certainly an easy matter in connection with any health-insurance legislation that may be adopted to strengthen the hands of such agencies and provide for effective work by them. In fact, this is one of the strongest reasons why sickness insurance and health conservation should be properly coordinated.

The scheme of organization outlined by your committee has in its support the fact that the health-conservation work of health agencies is applied alike to the entire community. The rich along with the poor, the minister and the lawyer along with the mechanic and the laborer, receive the benefits of health conservation. The sickness-insurance schemes thus far projected, however, provide merely for the extension of relief to certain limited classes. And they do this notwithstanding the fact that a large part of the funds are to be paid from the contributions of the entire people. At least, if the State is to appropriate such a large part of the fund, it would seem just that a fair proportion of the funds created be used in the protection of the health of the community through the agencies regularly established for the conservation of the health of the whole population.

The following resolves are submitted for the consideration of the conference:

Resolved, That in the judgment of this conference the use of the phrase "health insurance" to describe a system of sickness insurance that makes no specific, positive, and definite provision for the conservation of health is liable to endanger the efficiency of existing health agencies and retard their further development.

Resolved, That in any scheme for health insurance all activities looking toward the active conservation and promotion of health should be intrusted to the regularly established health-conservation agencies, which should be reorganized and reinforced for that purpose, if necessary.

WM. C. WOODWARD, M. D.,

Chairman.

The SURGEON GENERAL. This most excellent report is before you.

(It was moved and seconded that the report be approved.)

The SURGEON GENERAL. Without objection, the report will be approved and the resolutions will be referred to the resolutions committee. Is there any further discussion of the subject?

The next subject for consideration is standard methods of public health accounting. Dr. McLaughlin.

REPORT OF COMMITTEE ON STANDARD METHODS OF PUBLIC HEALTH ACCOUNTING.

Dr. McLAUGHLIN. Mr. Chairman, I regret very much that the advancement of the date of this conference is probably responsible for the fact that the committee has no report to offer at this time. Dr. Carroll Fox has prepared some tentative drafts of a uniform scheme of public health accounting, a copy of which I received the day I left Boston, with the respectful request that the committee be continued in order to get somewhere on this subject. We are absolutely unprepared to make a report at this time.

(At this point Dr. Kerr took the chair.)

The ACTING CHAIRMAN (Dr. Kerr). Will you make a motion to that effect, Doctor?

Mr. McLAUGHLIN. I move that the committee be continued, to make a report at the next meeting of the conference.

(The motion was seconded, and, the question being taken, the motion was agreed to.)

REPORT OF COMMITTEE ON INCREASING EFFICIENCY OF CONFERENCES.

The ACTING CHAIRMAN. The next subject we have for discussion is, increasing efficiency of conferences.

Last year a committee was appointed to deliberate on this matter, because it was suggested, and a resolution was offered at the last session of the last conference, providing that the membership of these conferences should be increased. The members of the committee are

Dr. Lindsay Williams, Dr. W. C. Woodward, Dr. Tuttle, and myself. Dr. Williams, just before sailing for Europe, notified me that he would not be able to take part in the preparation of a report because of stress of other matters. I will ask Dr. Woodward or Dr. Tuttle, whichever is prepared, to present a report.

Dr. TUTTLE. Dr. Woodward should read this report, but he says that his voice has played out. It never did happen before. The report is as follows:

(Dr. Tuttle then read the following report:)

INCREASING THE EFFICIENCY OF THE CONFERENCES.

The law authorizing conferences of the Public Health Service with State and Territorial health authorities, including the District of Columbia, is as follows:

"When, in the opinion of the Surgeon General of the Public Health and Marine-Hospital Service of the United States, the interests of the public health would be promoted by a conference of said service with State or Territorial boards of health, quarantine authorities, or State health officers, the District of Columbia included, he may invite as many of said health and quarantine authorities as he deems necessary or proper to send delegates, not more than one from each State or Territory, and District of Columbia to said conference: *Provided*, That an annual conference of the health authorities of all the States and Territories, and the District of Columbia shall be called, each of said States, Territories, and the District of Columbia, to be entitled to one delegate: *And provided further*, That it shall be the duty of the said Surgeon General to call a conference upon the application of not less than five State or Territorial boards of health, quarantine authorities, or State health officers, each of said States and Territories joining in such request to be represented by one delegate."

In accordance with the above, there have thus far been held 14 annual conferences, 3 special conferences, and a number of conferences relating to quarantine matters. In the annual and special conferences all the States and Territories, and the District of Columbia have been invited to send representatives. In the quarantine conferences, the delegates were quarantine officers at the several ports, and the purpose was to discuss revisions of the maritime quarantine rules. The transactions have been published, and the results in the form of resolutions and agreements made available alike to the Public Health Service and State and Territorial health authorities for their use in so far as possible.

The expressions from delegates, who have attended from year to year, and examinations of the transactions will show that the utility of the conferences has increased. Not only has a better understanding been established, but uniformity in health administration has been encouraged. In conformity with the law, each State, Territory, and the District of Columbia is entitled to one delegate. This provision has been construed, however, so that each delegation might include among its numbers as many of the State, Territorial, or District health officials as might be deemed desirable. In addition, persons interested in special subjects to be discussed have, from time to time, been invited to attend the conferences as guests.

The question has arisen whether delegations of the respective States should not include local health officers. In some respects this might be desirable. Your committee believes, however, that the policy of limiting the repre-

sentation to State health officials has been wise certainly up to the present time. Thereby the strictly official character of the conferences has been maintained, and assurances of their greater usefulness increased.

It is essential that there shall be some common ground on which Federal and State authorities may meet and harmonize their efforts toward the same general end. Indeed, in many countries having more diverse governmental organizations than ours such councils are provided, but with this important difference: In these foreign countries such councils are advisory and relate largely to scientific matters. It is believed the conference of State and Territorial health authorities with the Public Health Service in its organization and objects is unique. In fact, in this respect it approximates international sanitary conferences, whose actions, before they become effective in a participating State, must be approved by the legislative body of that State.

From the above the high official character of these conferences and their potentialities are indicated, and it seems advisable that these should be maintained and developed even at the expense of wider councils, at least for the present.

As a means of considering health matters from a broad standpoint it is believed that every State and Territory should by law be required to hold like conferences of State and local authorities. These conferences could thus be considered constituent to the national conference, and problems arising out of the former could be made subjects of deliberation by the latter.

Of course, the interest of the conferences from year to year, and to a certain extent their efficiency, will depend on the subjects presented for consideration. Generally these should relate to problems indicated by administrative difficulties experienced by the several participants of the conferences in the interim of meetings. Every State health authority, therefore, should feel free to bring to the attention of those having the arrangements of the conference in hand subjects which to them are deemed important or which should receive uniform action of other State and Federal authorities.

In order that the conferences shall be working conferences, not only at the annual meetings but in the interim, it has been suggested that a representative of the Public Health Service shall be specifically designated to act in the capacity of a corresponding secretary to receive communications regarding executive problems and to keep alive the interest of health authorities in the resolutions and agreements arrived at in previous conferences. Your committee believes this is a good suggestion.

The advisability of the appointment of an executive committee has also been suggested, which committee, in the interim of meetings, could advise the Surgeon General and consider means whereby the efficiency of conferences—that is, the enforcement of resolutions and agreements—could be promoted. Not only should there be a secretary who would keep the affairs of conferences constantly before the several State and Territorial health authorities, but the committees already existing and to be appointed should have some means whereby they could meet as might be necessary in anticipation of conferences to prepare reports, resolutions, model by-laws, and the like. The adoption of a resolution to this effect at this time would appear to be pertinent. It should then be brought to the attention of legislative bodies by the respective State health authorities and possibly to the attention of governors of States and Territories by the Secretary of the Treasury.

Finally, to insure the success of any steps for the improvement of the efficiency of these conferences, everybody having representatives present must feel that it is a part of the conference and that this is a means of meeting both Federal and State officials under favorable official auspices, and each

delegate must take a deep personal interest in the deliberations and any definite action taken. His vote should mean that he is fully cognizant and in sympathy with the far-reaching results that may follow his action, and in committing his State he signifies that he is prepared in so far as possible to make these results applicable therein. In other words, the efficiency of the conferences will be increased in proportion to the earnestness with which problems are approached. Every resolution or agreement should be a reasonable one, and it should be the object to prescribe minimum rather than maximum requirements.

WM. C. WOODWARD.

T. D. TUTTLE.

J. W. KERR.

The ACTING CHAIRMAN. What shall be done with this report?

Dr. WOODWARD. I move its adoption.

The ACTING CHAIRMAN. Would you include in that the suggestion of the adoption of a resolution inviting the attention of the State governors to the importance of having delegates attend conferences and also to attend committee meetings in the interim of conferences. Dr. Woodward?

Dr. WOODWARD. Yes.

The ACTING CHAIRMAN. That is one point of the report.

Dr. WOODWARD. It seems to me, Mr. Chairman, that that at least goes without saying, and that I believe is one strong reason for keeping this a strictly official body, one acting under the sanction of a law passed by the United States Congress, so that each health officer in discharging any duty whatsoever pertaining to these annual conferences will be discharging a duty imposed on him by law, whether that be attendance on a committee meeting, or attendance on the conference itself. If any State officer here introduces a resolution suggesting the importance of providing definitely for attendance by State health agencies on committee meetings I shall be very glad to support it, but it seems to me entirely unnecessary.

Dr. TUTTLE. It seems to me advantageous, to say the least, to have the importance of these conferences brought to the attention of the governors of the various States by the Secretary of the Treasury. They do not know anything about it, most of them. We have a new governor every four years, and if we get him waked up the second year, by the fourth year he begins to take a little interest; but a letter from the Secretary of the Treasury calling his attention to the importance of these conferences plays much more part than the talk of a health officer. They think that he just likes to talk, anyway.

The ACTING CHAIRMAN. Is there any motion?

Dr. McLAUGHLIN. I think it is a pity that the conference should not have a resolution drawn up and referred to the committee on resolutions.

The ACTING CHAIRMAN. I was going to bring that up a little later. All in favor of the adoption of the report will say aye.

(The question being taken, the report was adopted.)

The ACTING CHAIRMAN. What is the desire of the conference as to formulation of a resolution on the subject to be referred to the committee on resolutions, or shall the conference instruct the committee on resolutions to bring in a resolution to the conference on its own account?

Dr. WOODWARD. I move the latter.

Dr. BRACKEN. As chairman of the committee on resolutions I shall rather object to being instructed to prepare a resolution. I think the committee should submit its resolution to the committee on resolutions, and I will say further that that committee will meet at the noon hour, so that if any resolution is to be presented it should be prepared to-day.

Dr. WOODWARD. I move that this conference request the Secretary of the Treasury to call the attention of the governors of the several States and all the health officers of the several States to the important character of these conferences, and request such governors and health agencies to provide means whereby their representatives can be in attendance, not only at the regular annual conferences, but at such interim committee meetings as may be necessary for the furtherance of the work of the conference itself.

Dr. McCORMACK. I second the motion.

Dr. HAYNE. In that I would like to have it distinctly specified that the Government shall not have the power to select the representatives of the States.

The ACTING CHAIRMAN. Is there any further discussion?

Dr. HAYNE. Does that include a resolution for an executive committee?

The ACTING CHAIRMAN. It would not. I think that could be appointed by the Surgeon General, following the adoption of the report. Is it the desire of the conference that this proposed motion shall be referred to the committee on resolutions, or shall we vote on it at once? If there is no objection, we will refer the proposed resolution, to be drafted, to the committee on resolutions, to be presented by the committee this afternoon.

I should like, if I may, to take the advice of the conference as to the length of meetings hereafter. We have been having from one to two days' meetings for a number of years, and I have always felt that they were not enough; two days is not enough. We have always worked very hard. When we only had one day we have omitted a part of the program. Would it be practicable for the delegates from the different States to spend three or four or five days with us and let the two conferences take an entire week?

It seems to me that last evening was worth an entire week to us—the information we got last night from Dr. Biggs—and many of our own ideas are crystallized as the result of discussions in these conferences, and it seems to me as if we could spend no better time in our work than in a conference longer, certainly, than two days.

Dr. McCORMACK. Mr. President, I move we accept the invitation, provided the Service pays the expense of the increased time.

The ACTING CHAIRMAN. The older members of this conference will remember that the subject was brought up for discussion distinctly at one time, and the State delegates voted against the Federal Government paying the expense for the State governments. If there is no objection, we will go on with the program for a few minutes longer, but, with your permission, we will make the report of the committee on rural sanitation and the report of the committee on correlation of Federal and State activities the order of business immediately after lunch.

THE UTILITY OF COLLECTING BY CORRESPONDENCE PUBLIC HEALTH INFORMATION FOR PUBLICATION.

The ACTING CHAIRMAN. I would like to present one more subject, which is as follows: The utility of collecting by correspondence public-health information for publication; (a) Sanitary legislation; (b) prevalence of malaria; (c) State appropriations for public-health purposes.

We want to know from the delegates from the several States whether this information, as it has been obtained, and it has been obtained in very complete form, in fact, is worth while.

Dr. TRASK. One of the factors in the development of public health administration in this country will be a knowledge of sanitary organizations and health conditions as they develop and change from year to year. There are certain things regarding public health administration and public health departments in the several States which we all should know. We should know the health officials and their post office addresses. We should know or have access to the laws relating to the public health being enacted, and the sanitary regulations being adopted. We should know the distribution of malaria and other diseases which are prevalent mainly in certain sections of the country.

The Public Health Service has during recent years been collecting and compiling data of the kind referred to. For six years a directory of the State health authorities, giving the personnel and their addresses, has been compiled and published. In the later directories the time of the ending of the fiscal year in the several States has been included and for four years such of the appropriations of the several State health departments as could be obtained.

For six years also public health laws and regulations of the several States have been compiled and published for the information of all.

Certain difficulties have been encountered in this work, which is done largely by correspondence. A few States usually do not reply to the questionnaires. Some States seem to be unusually slow in forwarding their replies. Some forward their replies only after repeated requests have been made. Some show a disinclination to furnish information which it is believed may not appear creditable to their State. Inaccurate statements are occasionally made, apparently due to the work having been left to clerks without subsequent careful scrutiny of the replies forwarded.

In an effort to get an accurate idea of the prevalence and geographic distribution of malaria and the kinds of malarial fever present in the several localities, in 1912 circularization of physicians was begun in certain States. A reply postal card was addressed every three months to all the physicians in these States asking for information regarding the number of cases of malaria treated by them. By this means data have been collected regarding the prevalence and geographic distribution of malaria in the States of Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and the eastern part of Texas. Malaria is present, however, in other States. In fact, the disease occurs to some extent in many sections of the country—undoubtedly to a greater degree than is suspected. It is intended to take up the circularization regarding the prevalence of malaria in other States. The practice in most instances has been to furnish the reply postal cards and have them addressed and put into the mail by the State health departments.

I think that this conference should make known its wishes and formulate a policy on these subjects. As regards sanitary legislation, it should definitely express itself as to whether it wishes the work continued and to what extent the State health departments should cooperate.

As regards the State directory of health authorities, it should express itself as to whether it wishes this directory continued, what information it wishes included, the time of the year when the directory should be made up, and the extent of the cooperation which should be extended by the State authorities.

As regards the circularization to determine the prevalence and geographic distribution of malaria, it should express its desire regarding the continuance or discontinuance of this work and the extent to which the State health departments should cooperate.

This work is of such importance and is possible of so much development that I think this conference should appoint a committee on the subject to outline the policy and desires of the conference regard-

ing these matters. It is not our intention or desire to add to the many burdens you all have, but this is your work; this information is being collected for you.

Dr. DOWLING. During a recent trip over Louisiana we found that only 6 per cent of the doctors of Louisiana report malaria. We went into one parish where they had not reported any at all, and 14 doctors admitted that they treated 900 cases in the last six months. That sort of thing is true in many places, so that I believe that it is important that this work should be continued and that we should have cooperation to get better results.

Dr. RANKIN. I believe we should express ourselves on this matter, because it is something, as has just been brought out, that is being done for us, and we do appreciate it and find it useful. I not only am in favor of this work being continued, and hope that it will be continued, but that it will be extended. By that I mean the publication of such things as the State laws, which I have found very useful. Physicians consult me about certain ordinances, and I take that book and send it to them and mark the law. The State laws should be made more useful by being reclassified to a certain extent. A certain amount of classification in those State ordinances and local ordinances would be very helpful. I confess that I have seen very little of the malarial reports. On the other hand, they have not been very valuable to me. The number of physicians that Dr. Dowling has said would report is so small that it would not give you any adequate conception of what occurred. I mean, no State health officer would base an opinion on the facts he gets in that way. Then another thing is that if all the officials reported, it would be very, very helpful; but we have got to continue also the number of carriers and the number of infected. The manifest cases are only a small percentage of the total. I do not think that the malarial reports are of any value. I pay no attention to them. If I wanted to know what counties in North Carolina had malaria, I would not base my opinion on those reports.

Dr. McCORMACK. Mr. President, we find, on the contrary, as to the malarial reports, that their accuracy has been very astonishing. When you take the number of doctors who have reported, the average running in the country from 25 to 43 per cent—when you take the number of doctors that have reported, and the reports they make, and work out the percentage as to the number of doctors in the State, and then take the counties in which we have made Federal intensive surveys, we find it very astonishing how near the results are. The figures were practically the same as from the intensive surveys; and one costs practically nothing and the other costs a great deal; and we are confining our antimalarial work to places

where it is indicated that there is enough to make it worth while, and we have been particularly interested in finding that in Jefferson County, in which Louisville is located, there is more malaria than in any other county along the Ohio River, and that has been confirmed by surveys under Dr. Frost along the Ohio River. We have been very much pleased with that work, and I believe it has been most valuable because it has been worked out regularly, and we print the results in our bulletins.

I wrote the Surgeon General a very vigorous protest a short time ago when there was discontinuation of the publication on account of a streak of economy that happened to strike the committee on publications; we get a great deal of help in our State from reading the regulations adopted in all the other States. We find that so many times a problem that we have had in mind but have not been able to settle exactly correctly somebody else has solved, and so well that we can adopt a regulation, slightly modified, that fits us exactly, and it is of value in that way.

Dr. TUTTLE. I do not know that it is necessary to speak for the department, but I think that the department realizes the importance of these reports, and I want to thank Dr. McCormack for what he has said.

Dr. CRUMBINE. I just wish to express my appreciation of this work. I may be wrong, but I think it would be very much better if we had an opportunity of having the information brought to us. I wish that it be continued.

Dr. SWARTS. Mr. Chairman, it is interesting, what is said in one part of the report, and it may not be a pertinent question, but I would like to ask in regard to those places which persist in having malaria, if the Public Health literature reaches those places?

The ACTING CHAIRMAN. In reply to Dr. Swarts I will say that our reports are sent generally to governmental departments and to sanitariums.

Dr. SWARTS. With methods of extermination?

The ACTING CHAIRMAN. With such things as we have been able to publish on that subject.

Is it the desire of the conference that a committee should be appointed to report to the conference on the character of public-health information that it is desirable to collect by correspondence?

Dr. FULTON. Mr. Chairman, I move that that is the sense of this meeting.

(The motion was seconded; and the question being taken, the motion was agreed to.)

The ACTING CHAIRMAN. The personnel of that committee can be named after lunch. I would like to remind the conference that the order of business immediately after lunch will be the report on

rural sanitation and the correlation of health activities, from the committee of which Dr. Biggs is chairman.

It is now 5 minutes of 1. and if it is agreeable to the conference we will adjourn until after lunch, at 2.15.

(Thereupon the conference took a recess.)

AFTERNOON SESSION, MAY 1, 1917.

The SURGEON GENERAL. If you will please come to order, we will have the report on rural sanitation, by Dr. Rankin.

REPORTS OF COMMITTEES—Continued.

RURAL SANITATION.

Dr. RANKIN. This report, like most of the reports of the committees so far, was prepared hurriedly, on account of not having a sufficient notice of the time of the meeting, and the credit of the report is due largely to the secretary of the committee, Dr. Lumsden.

About 53 per cent of the population of the United States is rural. Due to modern facilities for communication between the rural and urban districts, sanitary conditions in rural districts affect the health of the whole population. Judging from definite findings obtained in the course of fairly extensive surveys in different sections of the United States, it may be estimated that at over 90 per cent of the rural homes in this country sanitary conditions are obviously faulty. In the most elementary and essential matters of sanitation, such as water supplies and human excreta disposal, the vast majority of homes not connected with public water supplies and public sewerage systems are seriously lacking. Infections spread from insanitary collections of filth at rural homes affect directly and constantly the rural people, and frequently are conveyed by water, flies, foods, and persons to urban population. Thus insanitary conditions in rural districts of one section affect human health in other sections of the country. The determination of methods for the advancement of rural sanitation is a matter of both local and general importance. There is obvious need of coordinating and making more effective the operations of municipal, county, State, and National health organizations in an attack upon this problem.

SALIENT FEATURES.

Among the most salient features of rural sanitation to be considered are (1) disposal of the human excreta, (2) water supplies, (3) protection of foods from flies, and (4) general cleanliness.

In making a sanitary survey of a rural home a good perspective may be maintained by considering the chances for infection to be communicated to the other members of the household in the event one member of the household should become a typhoid bacillus carrier.

SANITARY DISPOSAL OF HUMAN EXCRETA.

The cleanly disposal of human excreta appears to be the most important single sanitary measure for rural districts. The importance of carrying out this

elementary and most essential principle of community cleanliness can not be overemphasized. The money or labor expended for making indicated improvements in this direction constitutes one of the best investments which can be made in any kind of community.

If, after due consideration, an agreement can be reached by this conference, it is deemed advisable that resolutions on minimal standards to be advocated for the sanitary disposal of human excreta in rural districts be adopted by the conference.

RURAL TOWNS AND VILLAGES.

Towns and villages are strategic points for carrying out sanitary measures directed toward the protection of rural health. The denser the population the greater is the menace from insanitary conditions. Much disease in country neighborhoods is caused by filth-borne infections which have their origin in near-by towns or villages.

The advancement of sanitation in our large urban centers has effected a very wholesome reduction in typhoid fever and certain other diseases in our strictly rural districts. The sanitation of towns and villages in a rural district would probably accomplish more for the health protection of the people living in the country neighborhoods than would the sanitation to an equivalent degree of strictly country homes equal in number to those comprised in the towns and villages. The legislative and police power of town governments in many instances may be applied advantageously for the advancement of sanitary work.

The treatment of public water supplies now in use in our rural towns, so as to make them safe, would cost each town but very little and would have a far-reaching effect in the prevention of disease in our rural districts generally. A sanitary drive over the United States with efforts directed especially toward securing needed improvements in public water supplies of rural towns and villages could be expected, if intelligently directed, to accomplish much in a short time for the protection of public health and for the general welfare.

In towns and villages which are not sewered and which can not be completely sewered immediately the installation and operation of sanitary-privy systems is highly indicated. In the vast majority of our towns and villages a reasonable appeal to the intelligence of the local people will be followed by marked improvements in this most important phase of sanitation. With the development of popular sentiment for sanitary improvements the town authorities will be enabled to enact and enforce ordinances requiring the installation and operation of a sanitary-privy system in a uniform and, consequently, an advantageous manner.

SANITARY SCORING.

In propaganda for sanitary improvements in a community the judicious use of a system of sanitary scoring of private homes, towns, townships, and counties will often prove helpful. Local pride obtains almost everywhere, and some persons will find in a desire to do better, or at least as well as their neighbors, an incentive for making sanitary improvements. In determining a system of sanitary scores careful consideration should be given to the relative importance of the different factors in sanitation. It seems that out of the hundred points in a sanitary score at least 40 should be allowed as the maximum for sanitary disposal of human excreta.

It is hoped that some discussion of the subject of sanitary scoring will be made by the conference so that the committee may be enabled later on to submit a system of scoring for detailed consideration.

GOVERNMENTAL COOPERATIVE ACTIVITIES.

It has been demonstrated that radical improvement of sanitary conditions in the average rural district can be accomplished by intensive work. A big problem before us at the present time is what scheme of general applicability may be adopted to make such work permanently effective. The county seems to be generally the logical unit for the administration of health affairs in rural districts. An adequate county health organization coordinated with national, State, and municipal health organizations seems to be the best hope offered for reasonably effective health work in our rural districts. The consideration of methods for establishing and maintaining such county organizations is in order.

It seems clear in view of the needs of the situation and of the intercounty and interstate character of the problem that the National Government and the State government cooperatively should offer to the county plans and either permanent or temporary financial assistance for carrying out health work.

An item in the sundry civil bill, which has now received favorable action by both the House of Representatives and the Senate, is as follows:

"RURAL SANITATION: For special studies of and demonstration work in rural sanitation, including personal service, \$150,000: *Provided*, That no part of this appropriation shall be available for demonstration work in rural sanitation in any community unless the State, county, or municipality in which the community is located agrees to pay one-half the expense of such demonstration work."

Under this appropriation the Public Health Service will be enabled to continue to make, without expense to the counties surveyed, an intensive study of sanitary conditions in counties in the different States. It will be able also to bear a part of the expense (not exceeding 50 per cent) for the support of a health force for demonstration work in different counties or other local units. Existing county health officers, when such arrangement may be deemed advisable, can be appointed as field agents of the Public Health Service at salaries not exceeding \$300 a year from the National Government and the remainder of their salaries be paid by county and State governments. Local health officers, appointed as field agents of the Public Health Service, may be given the franking privilege. Salaries of assistants to the health officer, such as sanitary inspectors and visiting nurses, can be borne in part or in whole by the National Government. The sanitary inspectors and visiting nurses can be appointed as employees of the Public Health Service after passing successfully locally conducted civil-service examinations.

In the counties in which this kind of demonstration health work is being conducted, special units of work can be injected from time to time; the cost of such units of work can be borne jointly or separately by the Public Health Service, the State, and the county.

Thus it appears that the Public Health Service is now in a position to work on a satisfactory basis with the State, county, and municipal health authorities for the advancement of rural sanitation. Operating as a central health agency it should be enabled to determine effective and feasible methods for coordinating the operations and for formulating standards of work in rural sanitation.

If enabled by cooperation from the State boards of health to use this appropriation advantageously, it is reasonable to expect that the Public Health Service will be granted further appropriations in order to expand the work as rapidly as the State boards of health and the county authorities will become ready to cooperate in an adequate manner.

In view of the urgent need of the work it appears highly advisable for State health organizations to use funds which may already be available for such purpose and to take all steps practicable to secure as soon as possible from their respective legislatures additional appropriations for cooperation with the Public Health Service in fostering adequate health work in the rural districts.

The SURGEON GENERAL. The legal provision referred to by Dr. Rankin has only recently been made, and an earlier announcement regarding it was therefore impracticable. In order for this appropriation to be utilized, however, early action is necessary. I may say that a number of plans have been under consideration. These plans include antimalarial work; second, intensive surveys along transportation lines; and, third, full-time rural health administration.

I will ask Dr. Kerr to explain the plans.

Dr. KERR. I think the committee has covered the subject fairly thoroughly. Of course, the members of this committee are entirely familiar with the work that has been going on and the steps that have been taken to enlarge it. Our work thus far has consisted of intensive surveys of counties, under the general supervision of Dr. Lumsden, every home in a county being studied. It is not intended that this kind of work shall be extended to every county; it is too elaborate a method. But other plans have been devised, the second of which is to take groups of towns along some line of communication or some transportation line, and to make surveys of them with the idea that they will undertake demonstration work, perhaps in conformity with the provisions of this law;¹ but the most important step, it seems to me, is the conjoint action of the State and Federal health services with counties, to make experiments here and there, as many as possible, of the usefulness of full-time health officers and adequate local health organizations in counties; and, personally, I would prefer to see the work develop along that line, and I think I should say for the bureau that we would be quite glad to have the States come forward with suggestions as to such cooperative work within their State, and we would aid in making the experimental demonstration of the use of a full-time health officer. The cost of a man for this work should probably be in the neighborhood of \$2,400 a year, and of course he would need sinews of war with which to carry on his work in the county. If necessary, I think, the service could bear in a county that amount of expense in order to secure the proper counties and the proper facilities in the counties, to do work, and in order that we should get officers who would be qualified to go into a county and do that kind of work. As county health officers they would have to receive the appointment from the county and preferably be designated as an employee of the county board of health and of the State board of health at the same time. In other words, they would be clothed with authority.

¹ See p. 101.

There is one practical demonstration of that kind going on now.

Dr. HURRY. Mr. Chairman and gentlemen, in Indiana we have been studying for the last four years the rural sanitation problem. In that time we have visited and scored over 10,000 rural homes. We have adopted a score card with only 10 points on it, because we wanted to be as simple as possible in this preliminary experiment or investigation. Men who were trained in their work were put upon motor cycles, in certain counties, and they were called upon to visit every home and score it carefully. In that way we have gathered a good deal of information. We adopted a standard of 75 to reach what we would call a passably sanitary home. Less than 2 per cent of all the homes visited were scored up to that figure. Over 60 per cent fell below 50. So you see that is a pretty bad condition.

Our statistics show that typhoid fever is more prevalent in the rural districts of Indiana than in the cities. We count the towns as rural. There is not a single town that has any sewers—a regular sewer system. They count as rural. Consumption is only 1 per cent less prevalent upon the farms of Indiana than in the cities; and that is rather astonishing, but nevertheless it is true.

We had our men eat as many meals as they possibly could at the farmhouses and pay for them, and put in the report what they got to eat. The fat meat and carbohydrate and coffee diet is the one that is very prevalent, and it is a very ruinous food on the health of the farmers of our State. Fat meat, cornbread, light bread, as they call it—always soggy, never well baked—molasses, flour gravy, and coffee; that is the scale of diet. It breaks them down; they can not live on it. The women gather the eggs and that is their pin money. In over 20 instances, we found in one county there, that they had no milk cows on their farms at all.

Now, these deplorable conditions exist principally on farms that are rented. They are owned in the city and are rented by persons who move from farm to farm, going to a new place each year. They give half their produce to the owner. The result is that the land is worn out, the property is run down, both parties to the bargain want to get all they can out of the land, and the sanitary conditions are deplorable. A paling comes off of the fence or a board comes off of the fence and it is not replaced by the owner at all, because he thinks he is being robbed by the renter, and the renter feels that he is being robbed by the owner, and between the two there is a very sad condition prevailing.

In our State, as in other States, of course, the agricultural professors, with their corps, are going about teaching the practical farmers how to do practical farming, and the question arises, Why is it necessary to teach the farmer how to farm? We do not have to

teach the broker how to bank. We have to tie him and put shackles on him or he would get away with it. We do not have to teach the dry-goods man how to run his dry-goods business. Not at all. We have to shackle him, too. [Laughter.] And so it is with almost every branch of life except farming.

After studying and thinking on the subject and considering all the data we have—we have not published it yet, but there is a mass of data—I furnished an abstract of it to Dr. Evans, who gave an analysis of it in the Chicago Tribune.

After having studied this whole situation I have come to this conclusion, that you have got to force, through law and with a club, better sanitation, if you get it at all. It will not come through education. You go to the broker or the rich man in the town who owns the land and you say to him: "Those conditions are horrible there. They have had typhoid fever, and there is consumption in the house." He says: "Well, I know that. If I put better conditions there the next renter will tear them all down." You go to the renter, and, of course, he will not make the improvements, and so things go on in a haphazard way; he has his sickness and buries his dead. It seems to me that right there is one of the great troubles of the system; that is, the absentee landlord.

Then, again, these people who are renters; examine them mentally. Nine times out of ten they are morons. They are the kind that would sell their cooking stove for a mere song to go to the circus. I found that. I found one instance where a little girl was starving to death. I found her in the rural school by inspection. That morning she had had but one pancake for her breakfast. For her dinner in her dinner bucket there was a little soggy biscuit. Her mother was a slack, shiftless woman; did not know how to manage. Go to the homes of those people; they live like wild animals. There is the trouble. If we will eliminate by some means the morons, we will get on; but so long as we have got the moron breed to carry on our shoulders and are favoring the breed, favoring the reproduction of the unfit instead of discouraging it, naturally things are more likely to get worse than better. So in talking this matter over I have argued for a very drastic law. No firm or corporation should have upon their premises any conditions whatsoever that might generate or permit or transmit disease, and I would make a very strong penalty to it. Now, with a club like that and with your all-time health officer, something can be accomplished. There has been an utter failure in getting an all-time health officer's bill because of the health officers themselves fighting it, and they slip down from \$2,500 to \$1,500 and do nothing or next to nothing, and, of course, they fight it and have fought it until finally they are overcome.

So there are three points. First, somehow or other, break up this absentee landlordism, people owning land who do not work it. I do not know how that could be done. I only say that it might be tried, some way. The next thing is, let us somehow restrict the multiplication of these incompetents that do not look further ahead than to sell a cow, and for half price, too—for half what she is worth—just to go to a circus; who have no power of self-control, have no thought of the future; who are like that lily we read of, you know, the lily of the field. So, we must have a drastic law. I do not know how else to get at it. You can not educate the banker, the man who owns the farm. You can not educate the moron who is working the farm. He gets just enough out of it to live on—or, rather, twice as much, because half of it goes to the owner. I do not know how else to get at it except by a drastic law. The all-time health officer is not alone enough. We have got to go further than that. He could do a great deal. We have pretty considerable powers over that now, but not enough. The rope is not quite long enough to tie the beast tight.

But the rural sanitation problem in our State is a very serious problem, indeed. The moral conditions are deplorable. Now, these things do not exist in all of our counties, but I will discriminate and say it is mostly the southern counties. None of the northern counties but are increasing in population and in wealth and in better conditions; but south of a line drawn right through Indianapolis occur most of these deplorable conditions that I have described, and I think they are due mostly to the people; for up north you do not find those people to any degree, and the houses are far better. But the southern counties are decreasing in population. One county, Crawford County, has lost 2,000 population in 10 years. They are feeble-minded, they are insane, and their criminal percentage is higher than that for the whole State, and it is getting worse and worse all the time.

Dr. CAMPBELL. I was raised in the country, 18 miles from a railroad, $3\frac{1}{2}$ miles from a country saloon, and I confess that I did not agree with the statement that rural sanitation amounted to very much until I heard the doctor include towns. I never believed there was as much typhoid fever in the country as in towns. I practice in a country village, where my whole practice is country work, and it is largely malaria, no typhoid fever whatever; but, of course, when you come to the towns having 2,000 inhabitants, you will take in the typhoid fever. We have lots of typhoid fever in the villages, but not much in the country.

Now, I moved to Trenton, Ill., and had a large country practice there. There was not much typhoid in the country.

Then I went into the sanitary work connected with the Illinois Central Railroad, and I find more and more, as I go on in the work,

that it is the large places we need to work in; that we need to concentrate our work where people concentrate. If we accept the idea that disease is communicated by contact, we must begin to get away from it. I go over the road once a year, and I have sometimes spent a day in a small village. I have a good deal of work to do there.

Take Chicago. There is one point in Chicago, at South Market Street, on which I sent in a two-page foolscap report. There are at that one place 1,100 employees. Then there are the yards.

Another thing: We ought, as we go along through the country, to look out for the places where traveling people get their drinking water. A few days ago I found a place, a restaurant—a lunch room—in a small village. I said, "I want a drink of water." The woman turned a faucet over the sink. I said, "Where do you get that water?" "It comes from the tank." I said, "Excuse me, I want to see that tank." I said "Where does that come from?" "It comes from a cow pond down here about half a mile." I made a report of that, but nothing was done about it. The physician officer reported that there was no cow pond there; he did not know of any cow pond being there. But the chief surgeon said, "Go and look at that yourself." I went down there and looked all over it. Every bit of water for the city main came from there, and the water was used by our people in the lunch room, as well as the rest of them there.

The hotel in another town was full, all the rooms full, and there were probably 15 at the table, and the only water supply was from an outside well surrounded by two or three surface privy vaults draining toward the center.

Now, I would like to take those things up with the State board, but the company says that they do not like us to report these things because it is looking into what is not our business. I mention these things because I think it is important to look after the drinking water at public hotels.

Dr. TUTTLE. I am sure we all agree very heartily with what has been said. I did not know Indiana had degenerated to such an extent as to rural sanitation. Regardless of the doctor's statement that typhoid fever does not come from the country, but that it comes from the town, just go to the hospitals and see where those men have been for the last two weeks. They have been out in the country, a large proportion of them. The people of Washington are not home stayers. They used to go to church, but since they invented automobiles and good roads they do not go to church any more; they go out in the country Saturday evenings, and the roads are thick with automobiles; and they go out and spend the week-end. They drink at this and that little brook, and in a couple of weeks they are down with typhoid, and we call it a city case.

Dr. CAMPBELL. And other kinds of fever. It may be scarlet fever.

Dr. TUTTLE. You spoke of typhoid fever. Ninety per cent of the typhoid fever in the State of Washington originates in the country, although probably 25 per cent of it is reported from the city; but the infection occurred in the country. Take it in the fall at the time our typhoid bobs up very heavy. It is at the time when the city boys have gone hunting and got infected in the country.

Our cities are in very fair sanitary condition. Our rural districts are rotten.

I believe that the people of Washington are susceptible to education. I find that they are, where I can get out and get to them. The farmer is inclined to clean up, provided you do not put too heavy an expense on him. Probably more of the people of Washington own their farms than in Indiana, because it is a younger State. There are more homesteads, and the Government will not let them sell their farms for a time.

Dr. HURTY. Can you get a renter to clean up?

Dr. TUTTLE. No; unless you get a law that says that the property is responsible. We send an order to clean up, and if it is not cleaned up, we come and clean it up, and the cost of cleaning that up is attached to the property as taxes.

Dr. HURTY. That is good.

Dr. TUTTLE. Now, there is a question I would like Dr. Kerr to explain to me, or anyone the Surgeon General directs. I would like to know what the difference is between an intensive survey and a demonstration. He told me yesterday there was a whole lot of difference, but he never got down to what the difference was.

The SURGEON GENERAL. Dr. Lumsden, you can answer that question.

Dr. LUMSDEN. Mr. Chairman, I was just accumulating a few remarks, and if I may answer that just a little later I will come to that, I hope, in the right place.

Dr. COLLINS. Are you going to tell the truth now? [Laughter.]

Dr. LUMSDEN. I am going to try.

We all appreciate the difficulties of rural sanitation. It is a much more difficult problem than is urban sanitation, because its advance depends upon individual intelligence. We have to appeal to the individual, in the home; we have to appeal to him in a way that will reach his intelligence in such manner as to carry him not only to a point of conviction, but to the point of actually doing something that requires labor or money. Now, that will be difficult in the city and it will be difficult in the country.

I believe, from such experience as I have had, that we can do a great deal to advance rural sanitation by educational work, by getting the facts of sanitation to the people, put directly, clearly, and

simply, so that it comes within the range of their comprehension. To print a bulletin and mail it out to the people is not enough. Most of them will not read a bulletin, in the country districts, any more than we wise urban people read the literature that comes to us through the mail. We have not time to read it all; and we think that anything coming to us for nothing is usually a scheme to get something out of us, eventually, and we do not worry our minds, in studying the details: we simply throw it away and forget it; and I think that most of the work that has been done in the United States to advance rural sanitation has been of such character that we could not expect any tangible results from it, and it is only within the last three or four years that we have attacked this problem in a way to expect reasonably to get any tangible results from it. And everywhere that I know that this work has been done in a fairly intelligent way—and I do not believe it has been done in a very highly intelligent way anywhere yet; I think our methods will stand a great deal of improvement, and we should work hard to get the methods improved, and we should work out the methods to get accomplished the most with the least expense—but everywhere I know of where there has been a direct approach to the people in the rural districts, where a direct attempt has been made in the homes, there has been a marked improvement in rural sanitation. Even one visit by a careful, competent person to a home—to all the homes in a community or a county—will accomplish a marked improvement in a considerable proportion of homes in that community. I do not think, that being the case, that we have any cause for great discouragement about the problem. I believe that the country people have got good sense. I believe that the country people have got sense enough themselves—this may be considered a very radical opinion, but I actually believe that the country people have got sense enough—to dispose of their own excretions in a reasonably cleanly manner. I believe that, and I have studied the matter for a pretty long time. The reason that they do not do it is because they have never thought of it. They have never heard of doing this business in any other manner than in the way they have been doing it. It is the custom. It is just as much the custom of the people, on the average, to put in insanitary privies as it is for the people of Washington to ride in automobiles on Sunday instead of going to church. They have not become acquainted with any particular advantage in going to church instead of riding in automobiles, and they do it instead.

We have kept too closely to ourselves, and have not spent sufficient pains to convince them of the importance of it. The Public Health Service, in cooperation with State and county health organizations, has made a complete sanitary survey, in the last three or four years,

of 14 counties, and I am glad to say that one of them was in southern Indiana. That was in 1911. That is where this scheme of work was first born, so far as I am aware. In Lawrence County, Ind., they had two towns of considerable size, Bedford, Ind., and Mitchell, Ind. Mitchell, Ind., a town of about 5,000 population, had no public water supply, no sewerage system, and they had the usual conditions obtaining where there are not those things in a crowded community like that; no sewerage system and no public water supply, and open wells and open privies all mixed up together, and free communication between. We carried these simple facts that we know there, about the importance of separating the things which we disjoin from our bodies from the things that we put into our mouths and swallow. We carried those facts to the homes and to the people. We laid them on the doorstep. We talked over the back-yard fences with the people. We did not get the thing started all at once. Things do not happen all at once. You can not start a good-roads' scheme in a community all at once. It takes time. It takes a lot of reasoning to convince people that it is best to change from methods of doing things that have been in practice for many years back. That town was getting a wholesome sentiment. We had on the street a crowd of 1,500 people. A public meeting was held, and the mayor and a number of prominent citizens addressed the people—local citizens addressed the people—advising them that an ordinance was about to be passed providing certain sanitary measures to be taken; the band played, and pictures of insanitary privies were thrown on the screen. The people had become accustomed to discussing sanitary measures in open meeting. Why, it had become one of the chief topics of drawing-room conversation. [Laughter.] Before they passed the ordinance 50 per cent of the families in that town had installed good, high-grade, sanitary privies, sure-enough sanitary privies, not makeshifts, but fly-proof privies, privies with watertight receptacles, and after they got about two-thirds full an efficient scavenger service which they installed came and took it away and gave it decent burial where it would not do any harm. Every home in town promptly complied with the terms of the ordinance. That town had been one of the chief foci of typhoid infection in that part of Indiana, and it became practically free from typhoid fever. Now, I do not know how long and how well that work has held up. I have not been up there for two years, but the year after it commenced it was still in good shape. I do not know how well it has kept up. The local health office there is lacking, and where you have no one whose business it is to look after the business, we can not expect it to hold up, any more than the banking business would hold up if there was no one to look after it.

Now, to answer Dr. Tuttle's question, if I can: I do not know that we will be able to answer the question satisfactorily until we get a ruling from the Solicitor of the Treasury in regard to this point. My understanding, if you will permit me to give a legal opinion from an illegal education [laughter], is that the work we have been doing can be continued under the head of investigation, or intensive survey. In other words, we can put a force of men, under this appropriation, into a county in a State, and make a sanitary survey of the county, go into every home in the county, fill out the cards, canvass the members of the families, obtain their health histories, make a sanitary survey of the premises, record it, report the finding, and leave. That is all intensive sanitary surveying, and can be done either with the financial assistance of the county or the State, or without it, under the law, as I understand it.

Now, if we want to make of that county a demonstration county, for instance in Lawrence County where we made a survey if we had wanted to keep on the job there, two or three men constituting what we might call a reasonably adequate health organization, to keep the work up and to get it gradually improved or as rapidly improved as possible, and had those men paid in part from the National Government and in part from the State government and in part from the county government, if such cooperation had been obtainable that county would have become a demonstration county, and that work would have been demonstration work. If we detailed one of our officers to go to some county and act as health officer for that county, he would go there to demonstrate methods of administering health work. I can understand how a lawyer could make it almost any way he wanted it. I can understand how he might go there to make a study of health administration in counties, and that might be done under the head of investigation. To my mind to separate the two things is very difficult. But under the law, as I understand, we can continue to make surveys, but if we settle down to the county with a view to cooperating with the local authorities, financially, and supporting a health organization to keep the work up, it will be considered demonstration work; just as the Agricultural Department call their work demonstration work when they put a field agent or a county agent in a county to demonstrate methods of farming. If we wanted to build 100 sanitary privies of a certain type in a county to demonstrate to the people what a sanitary privy is, that would be demonstration, because as it is, half of the expense of building those sanitary privies would have to come out of the State, county, or municipality. I do not think there is going to be any difficulty. The law impresses me as being exceedingly fortunate. It gives the bureau a good range in which to exercise its discretion.

Now, I want to dwell for just a moment on this plan of cooperation as I see it. Things have been moving so rapidly in the last few days that it is hard for a slow moving body to keep up with them, but it seems to me that into this general scheme that we have been discussing for the last two days, of coordinating the health forces of the country, we can work this scheme for rural sanitation.

For the health force for a county, a one-man county health officer, if he is a good man, can do a great deal. If that is the best that a county can be persuaded to do, I think a one-man county health officer, a full-time county man, is a whole lot better than none. He is worth a whole lot more on the average than a part-time officer. Some of them we would not expect to get up a fund of more than \$2,000 or \$3,000 a year for health work at once, until they had become educated to the importance of this work, but we could get them started with the full-time one-man organization. I think that one of the features of this matter to be studied is how much a one-man full-time organization can be expected to accomplish.

A scheme that I think is more important, and I hope we will be able to try that out with the help of the State organizations, is what we regard now as a reasonably adequate organization, a full-time officer, a visiting inspector, and a visiting nurse. That would be reasonably good for the average county. Then when there is an intensive survey we have the health organization on the job, and we can keep the work going.

Now, how bring this about? We go to the average government of a county and talk to them about spending \$6,000 or \$7,000 a year for health work, and they do not listen to us very patiently. It is out of the question; it is such a tremendously radical suggestion to make to them, the idea of spending \$6,000 or \$7,000 for county health work. But if we can get a few counties in the several States to try it, and demonstrate the value of that work to the people by showing that by the lessening of disease, the improvement of health and the protection of health, \$6,000 or \$7,000 is an insignificant amount compared to the dividends that they are getting on their investment in life and in health, county governments will then listen to us. As I understand it, the purpose of this act is to enable the Public Health Service to cooperate with the State boards of health in offering to the counties financial assistance to demonstrate the value of health administration in rural districts, taking the county or the township, as the case may be, as the unit. The National Government under this can pay one-half of the expense. If the State would pay one-fourth of the expense that would leave only one-fourth of the expense for the county to pay, and yet would give them a financial interest. Say we could induce the counties as a rule to pay one-half of the expense for the first year, and in the second year only

one-fifth of it. Dr. Rankin is trying that. I am receiving a lot from what he has worked out. It belongs to us all, does it not?

Dr. RANKIN. Yes.

Dr. LUMSDEN. In the second year let each county pay 25 per cent, and after that continue to give them a little financial assistance, and so hold a string on the local men, or leave them alone. If they do not see it in three years, it may not pay at all there to nurse them along any longer. Those things are all to be considered.

Dr. DOWLING. Does this include the employment of the health officer?

Dr. LUMSDEN. The matter of the appointment of the health officer is a very pertinent question. That is a matter we have not worked out entirely yet. My impression, individually—I must not hold the bureau responsible for this, because we have not gone into the details of this thing entirely yet—my understanding is, as Dr. Kerr told you, in the first place, an officer would be detailed from the Public Health Service to act as county health officer. We will say his salary is \$2,000 a year and his expenses would be \$400 or \$500 a year. We might bear all of that. We would simply detail him to do the work in the county, and then the county and the State together would have to spend \$2,400 or \$2,500 to pay for the equipment, enough to make up \$2,400, so that they would spend as much for the man's work as the National Government is spending.

Another scheme is in counties where we have the efficient full-time county health officer. I think under the laws and regulations of the Government those men could be afforded, under some suitable title such as field agent of the Public Health Service, say, \$300 a year, just as the collaborating epidemiologists, of whom you have heard, are accorded. The main part of the salary is paid by the State or the county, but we could pay each \$300 a year and give him an appointment as field agent of the Public Health Service. He would make his reports, then, and the State, paying part of his salary and the United States also paying a part, he would send one copy of his report to the State health department and one to the Public Health Service. He could, of course, be appointed by the county authorities, just as he is now, but then we might stipulate that in order to have him be appointed as field agent he must present satisfactory proof to us that he is competent to do this work. The State might say, "In order for us to appoint him and pay a part of his salary as a State officer, he must satisfy us as to his competence." I think we can work out these details very satisfactorily under the law.

Dr. PARLETT. How when the county health officer is a lawyer?

Dr. LUMSDEN. I do not see why a lawyer should not make a first-rate health officer, if he is a good lawyer. I really believe, and I think most of you will agree with me, that some knowledge of law is

pretty nearly as important in a health officer's education as a knowledge of medicine. In the usual sense, we recognize that the psychology of a sick room is the most important thing for the health officer to know. That is where his troubles begin and where he can end them; so it is important for him to be a doctor, that he shall have had experience as a doctor, and that gives him, I think, the best single point he can have as a health officer. Next, I believe, some training in law is highly important. I know of no reason on earth—this may be the rankest kind of heresy—but I know of no reason on earth why, just because he is an attorney at law, he can not be a good health officer; and I think a sanitary engineer has a tremendous advantage, in all useful information, as a health officer.

I do not know of any reason why we should withhold our cooperation from Connecticut just because your health officers happen to be lawyers. There is nothing that I know of that requires them to be doctors. So I think that all these details can be worked out satisfactorily with your cooperation. And I mean by that real sure-enough financial cooperation. We can spend this \$120,000 between July 1 of this year and July 1 of next year to the great advantage of this country. I think, if we really are to take care of the responsibilities that are on us, we ought to start this great work of rural sanitation with the opportunity that Congress has given us now.

Dr. WELCH. Where there is an appropriation of \$2,400 for the health officer and \$600 for his expenses, would the Government take that man and make of him their representative and supplement this appropriation with an additional \$3,000?

Dr. LUMSDEN. I hope so, and I think so. So far as I can see, so far as I know, that can be done. I think the idea of Congress in giving us this legislation was to enable us to accomplish demonstrations in rural health work. Now, if the county has already gone so far as to appoint a full-time health officer and to give him \$2,400 a year, they have already come up to the point we want the counties to come up to. The idea of this, as I say, is for us, the National Government, and the State government, to join with the county government, taking the ones that offer the most desirable prospects, to make a good job of sanitation. If you go over in Walker County, Ala., you will see some real rural sanitation. If you had one county in Alabama where you could say, "We would like to have you go down to that county and rake it with a fine-tooth comb and see if you can find any insanitary conditions such as you find in the rural conditions generally, we would be demonstrating. We would be demonstrating how water supplies could be best protected and their purity insured; how excreta disposal can be accomplished, and so on. I think that is the idea, to go into the counties which already have

full-time officers. I think those should be the ones to be considered, certainly as most favorable for the purpose of this work which seems to have been in mind when the law was enacted.

Dr. HURTY. You will find this true the world over, that strong men seek education and make opportunities and bring things about, and weak men do not. That is all there is about it. You want strong men, and you have all these evils in proportion as you have weak men, and you must take that into account as sanitarians. But I want to state just one more fact about this survey of ours. We found so many of these rural people that were arch liars, and they would lie direct to you; and, now, that is serious. [Laughter.] For instance, one of our men goes to a house, and he says: "Have you had any sickness in this house in the last two years—serious sickness?" Then we will explain that he means typhoid, consumption, etc., and to that question in over 60 per cent of the instances, where we received a negative answer, we found it was not true. I made a lot of these surveys myself, so that I could get acquainted with the work in detail. This constituted a regular psychological study. A woman comes to the door. "Madam," we say who we are, and "we have come here to help you. This is a nice little home that you have got here"—start in that way to get their confidence. Then you get down to your line of questions, and you come to that question, "Any sickness in this house in the last two years?" This one woman that I have in mind said this, and it is a type of this trouble: "No." "Didn't your daughter Anne die three months ago in this house of typhoid?" She said, "Yes; and what business is it of yours?" And she slammed the door.

Dr. LUMSDEN. She did not like you.

Dr. HURTY. No; I caught her in a direct lie. Now, again, we meet that sort on other than typhoid lines. We will ask, "What sickness have you had?" and they will say, "None;" and we will say, "No diphtheria?" "No." "Have not your children been out of school with diphtheria?" "Oh, yes; they have had bad colds."

Then we throw in, "You used patent medicine?" "Yes." Every darned one of them uses patent medicines. You haven't got a chance with patent medicines. I do not know how you are going to get them out of it. They eat that carbohydrate diet, and then they turn to the patent medicines, and down they go, with all the diseases.

Just one more word, Dr. Lumsden. You do state the truth most forcibly and splendidly when you say you have to have some person, a whole-time health officer, to hold that work up. In Lawrence County the commissioners did clean up that horrible privy that they had on the public square, but it had all relapsed back to the old, bad conditions until a short time ago, when we put a notice there

that they would be prosecuted. This was, I think, at Bedford. Mitchell has held up better.

One more incident: Almost within sight of Indianapolis is the town of Waverly, 7 miles down the river. A very rich farmer, a man who was competent to amass a fortune of \$50,000, bought a house that a progressive man had built there, with an inside water-closet and a bathroom and rural waterworks, and when that man died soon after he built this property—this house—and this farmer, worth \$50,000, came there and bought that house, and the first thing he did was to tear those inside water-closets out of the bathroom, because, he said, "If we do not do that we will be as sickly as they are in the city."

Dr. DOWLING. Mr. Chairman, I am sorry that I did not hear the paper, as I had to go down town on other business, but may I ask if it would not be possible for the State boards of health cooperating with the Public Health Service to make inspections of post offices throughout the various States, and these reports, if necessary, to be transmitted by you to the Post Office Department, whereby every post office in the State—that is, every building in which a post office is located—should be kept in a clean and sanitary condition; that it should have provided a potable water supply; and that it should have the proper method for a water and waste disposal. I have had occasion to go into a number of post offices, not only in Louisiana but in other States of the Union, where the building and the method in which it was kept were far from being what they should be. Often I have gone into the post office and asked for a drink of water, not that I wanted the water, but just to see what kind of water they had, and it is not unusual to get into a place where they say they do not have water. I have had them say, "You can go across the street and buy a bottle of pop or get soda water," and it seems to me that every Government building and post office should be provided with those things, and if we could get them in the Post Office Department, then we would have a sanitary place as an example for everybody in the city.

The SURGEON GENERAL. I will say to Dr. Dowling that I think that is a very important question which ought to be taken up at an early date.

If there is no objection, we will now hear a report from the committee on the need of correlating Federal, State, and local health agencies for service in times of emergency. Dr. Biggs.

THE NEED OF CORRELATING FEDERAL, STATE, AND LOCAL HEALTH AGENCIES FOR SERVICE IN TIMES OF EMERGENCY.

Dr. BIGGS. I would like to offer these resolutions:

Resolved, That in the opinion of the executive health officers of the various States and Territories the United States Public Health Service should estab-

lish and promulgate standards as to potency with reference to all biological products, vaccines, and sera not only with relation to diphtheria and tetanus antitoxins, but also especially with relation to antimeningococcus and pneumonia sera and vaccines for typhoid and paratyphoid fever and bacillary dysentery.

Resolved, That the Surgeon General of the United States Public Health Service be requested to definitely formulate and advise the executive health officials of the various States and Territories of the lines of activity in which the United States Public Health Service is able to extend aid to the State and local health officials of the country in case of necessity during the war.

I will say in regard to the first one that we found in New York State last year, at the end of 1915 and the beginning of 1916, that all of the commercial antimeningococcus serum was practically without value. It had no immunizing power, and we compelled the manufacturers to withdraw it all; and in the early part of the war, in the Canadian camps, where they had cerebrospinal meningitis, and also in England, where they had epidemics of cerebrospinal meningitis, and where they were supplied with the commercial serum from this country, the results were so disappointing that the British military authorities came to the conclusion that it was practically valueless. The directors of the Rockefeller Institute for Medical Research then decided to take up again the production of this serum, as they had previously given up the production of the serum after it had passed the experimental stage, and large quantities of it were sent to France and to England, and the results of its use were most satisfactory. They found that the serum which had been sent there previously was practically valueless.

The same thing has occurred with reference to pneumonia serum for the treatment of type 1 organisms; serums which had been put out by the commercial manufacturers had been for the most part without value, and it seemed to the committee that it was extremely important that the standards of potencies of these sera should be definitely determined, and these standards promulgated, and the commercial firms producing them required to maintain those standards or else abandon the production.

In some cases, the same has been true of the typhoid vaccine. We found typhoid vaccine being sold in New York State which had no value.

Dr. DIXON. I move the adoption of the resolution as read.

SEVERAL MEMBERS. I second the motion.

(The question was taken and the motion was agreed to.)

Dr. TUTTLE. I would like to move that the Surgeon General be requested to have extra copies made of these resolutions and have them ready so that the members or representatives here can have copies of them by day after to-morrow. If necessary for the Sur-

geon General to employ additional help, we can pay for that ourselves.

The SURGEON GENERAL. That can be done, Doctor.

Dr. McCORMACK. I would like also to add to Dr. Tuttle's motion the suggestion that these very important resolutions be given to the press of the country, so that the whole country may know of the use to which the Health Department of the country will be put now, in time of war, and about the work that is being done in order to make it available.

The SURGEON GENERAL. If there is no objection, that will be done.

Dr. KELLEY. Mr. Chairman, I take just this opportunity to announce that the resolutions ordered copied at the meeting of State and Territorial boards last night have been struck off; at least, there are about 70 copies of them here, so that there are plenty of copies for each State delegate, and probably there will be enough for each individual in the room.

While these are being distributed I would like to make an explanation. I have taken it on myself, as secretary of the meeting last night to make a change so that it does not read by our regularly constituted title of the State convention, because there was no State convention. "Conference of State and Territorial health officials" is a more appropriate title.

Dr. RANKIN. I want to ask the Committee on Extension of Federal assistance to rural sanitation in the several States and the conference secretaries, which consists of Drs. Crumbine, Sawyer, McLaughlin, and myself, to meet in room 466, Hotel Raleigh, at 4.30 this afternoon.

The SURGEON GENERAL. We will have next the report of the committee on establishing areas of morbidity. Dr. Leathers.

REPORT OF COMMITTEE ON ESTABLISHING AREAS OF MORBIDITY.

(Dr. Leathers submitted the following report:)

AREA OF DISEASE PREVALENCE.

Your committee has considered the proposed plan for the establishment of an area of known disease prevalence. The matter of the establishment of such an area, in the opinion of your committee, is the most important step in the development of public health administration in the United States, and its accomplishment can not help but have an increasing and far-reaching influence on sanitary administration. Your committee indorses the proposed plan. It has found, however, that many preliminary details will need to be worked out and decided upon, such as:

(1) What legal requirements for notification will be a prerequisite to admission to such an area; whether the model law for morbidity reports or parts of it or an entirely different law will be required.

(2) What manner of enforcement of the legal requirements of notification will be required.

(3) The methods of checking the completeness of notification in areas admitted or proposed for admission.

(4) The diseases which, for the purposes of the registration area, will be considered notifiable diseases and of which data will be compiled for the area.

In the operation of the proposed plan your committee recommends:

(1) That it not only be operated in a registration area composed of territory in which the notification of disease had reached a given standard of completeness, but

(2) That the plan be put into operation in all of the States which will undertake to carry out the details necessary for developing and improving notification in the nonregistration territory, that better information of the prevalence of disease might be obtained, and that when such territory measures up to the proper standard it be admitted to the registration area.

The details necessary for operating the proposed plan will require most careful consideration. This should be accomplished both by the States individually and by the Surgeon General of the Public Health Service, as it will involve matters which can not be finally determined by your committee in the short time at its disposal, but it is desirable that such details be worked out during the next few months and that every member of the conference in session should leave with a thorough understanding of the proposed plan in order that he may weigh the matter carefully, as it may possibly affect his State or other States and be of material help in making constructive suggestions.

W. S. LEATHERS, *Chairman*;

S. J. CRUMBINE,

E. G. WILLIAMS,

J. W. TRASK,

Committee.

Dr. McCORMACK. I move that the report of the committee be adopted, and that the Surgeon General be requested to put the plan into operation as early as is practicable.

(The motion was seconded.)

The SURGEON GENERAL. Without objection, the resolution will be entered on the minutes as adopted.

The next topic is, "The need of morbidity statistics from general hospitals, special hospitals, and sanatoria, and means for their collection."

THE NEED OF MORBIDITY STATISTICS FROM GENERAL HOSPITALS, SPECIAL HOSPITALS, AND SANATORIA, AND MEANS FOR THEIR COLLECTION.

Dr. Cox. This little paper is an outgrowth of some correspondence between members of the Public Health Service and members of the American Medical Association committee. The secretaries of the State boards of health, being also registrars of vital statistics in so many instances, will no doubt be interested to know of this by-product of your committee's work.

I believe Dr. Trask suggested this morning that a set of standard morbidity tables be printed.

(Report by Dr. Cox was not secured by the stenographers.)

The SURGEON GENERAL. The discussion will be opened by Dr. Trask.

Dr. TRASK. The conference expressed itself a year ago as believing that the time had arrived when it was practicable to establish a registration area of notifiable diseases. Through the cooperation of this conference such an area will undoubtedly be established in the very near future. The establishment of this area will, it is believed, constitute one of the milestones in the progress of public-health administration. It will mark, in a measure, the point at which public-health administration will leave the path of propaganda and enter that of accomplishment.

Nevertheless, it is to be borne in mind that this registration area will relate only to the notifiable diseases and that the health department of the future will be concerned with more than these. In fact, we are now beginning to be concerned also with the prevention of other maladies. It is highly desirable that public-health workers have at their disposal for their information and guidance the available information regarding the prevalence of all diseases and the conditions under which they occur, that such measures as may be practicable may be taken to prevent their occurrence. There are at least three neglected sources from which such information may be obtained. One of these is hospitals, including general hospitals, special hospitals, and sanatoria. A second is penal and allied institutions. A third is industries where medical supervision is furnished to the employees, or in which sick-benefit funds are maintained. Each of these offers at this time a field in which may be established a registration area for the collection of morbidity data showing the prevalence and conditions of occurrence of many diseases not now notifiable.

The establishment of such areas would need to be on a cooperative basis. In establishing an area for industrial establishments the cooperation of the employees and employers, and particularly of the medical staffs and those administering the benefit funds, would be necessary.

For the hospitals and allied institutions possibly several registration groups would be required—one for general hospitals and other groups for the various types of sanatoria and special hospitals. The compilation of hospital and sanatoria data would be possible only with the cooperation of those in charge of the hospitals and sanatoria.

A registration area for penal institutions would give a vast amount of valuable morbidity data of public health and social interest regarding the diseases of inmates at the time of admission and the

diseases acquired during confinement. A morbidity-registration area for these institutions would necessarily be a question of voluntary cooperation.

It is to be desired that in the beginning the better and more progressive institutions of each type be selected to form the original nuclei for their respective registration areas. As the existence of such areas becomes known and their purpose understood, other institutions will find it to their advantage to secure admission if possible to the areas.

Dr. DOWLING. May I ask Dr. Trask if he has worked out any forms for these reports?

Dr. TRASK. No; Mr. Kopf, as you remember, suggested that we might start the plan by simply getting certain hospitals to adopt a common nomenclature, so that they would talk a common language, and then publish their data in uniform standard tables, so that they would furnish data which would be comparable for the different hospitals.

Dr. Boldnan suggested that a group of hospitals be taken, and that the hospitals make out a discharge certificate for every case when discharged, giving fundamental data, such as name, age, sex, diagnosis, of course, termination, and duration of residence in the hospital. The discharge certificates would be sent to a central office acting as a clearing house for all the hospitals.

Mr. Kopf's suggestion is perhaps a better one, but that is a matter to be worked out.

ARE HEALTH AUTHORITIES USING ALL AVAILABLE INFORMATION AND MEANS TO REDUCE MORBIDITY FROM PNEUMONIA, SYPHILIS, AND TUBERCULOSIS?

Dr. McLAUGHLIN. I think the one thing that is of prime importance to the health officer now is the proportion of syphilis; and I think the first thing the health officer ought to do in surveying his field is to revise his tables of mortality and to rewrite them in order of precedence, based upon the number of deaths owing to that factor, and to the means available for reducing that factor, and the ease or difficulty with which it may be reduced; and on those premises to base his activities.

Many of us have not done that always. We are apt to concentrate activity upon some factor in our death rate which perhaps is a minor factor, and I think we are all apt to lose our sense of proportion at times, especially in times when there is a spectacular epidemic; but one thing on which we can all agree, I think, is this, that the greatest single factor in our contagious-disease problem—and now, of course, I do not want to give the impression that our field is confined to communicable diseases, but considering, for the time, communicable diseases, we find that our greatest factor in our con-

tagious-disease problem—is tuberculosis, and I think I may dismiss that by saying that we are probably all alive to the using of the available means we have to combat tuberculosis.

I think you will also agree with me that the second factor in communicable diseases is pneumonia, and there a great question arises: Are we doing everything possible to reduce the mortality from pneumonia?

On the third proposition I do not know whether you will agree with me, but it is my opinion that syphilis ranks third as a cause of death and a cause of disease and as a cause of economic loss in our States. This is a difficult thing to prove, because syphilis, as syphilis, does not get into our records. It gets into our records under a dozen different names, and we can only guess at its prevalence. But certainly, even if it is not third—and I personally believe that it stands at least third—it is one of the very great factors, and the question is, Are we doing anything or are we doing what we might do to combat syphilis?

You might say typhoid fever is a very minor problem. It is a problem that involves a couple of hundred deaths, or 170 deaths, in a year. It does not run into hundreds of thousands; and yet we still give and spend a great deal of money on typhoid-fever prevention, because we have to hold the ground that we have gained. If we have got good water supplies, that are responsible for that tremendous reduction, we have to spend money, and very properly so, to maintain the purity of those supplies; and we may take cognizance of these tremendous factors in our death rate. And, while I believe, as I said before, that tuberculosis is combatted successfully with all the means at our command, I do not think the same is true of pneumonia and syphilis.

Now, what can we do with these diseases? With syphilis many things have been suggested—social-hygiene associations and other ideas, some of them sound and some of them impracticable—but aside from that there are certain practical things that health officers can do. If we regard every man with syphilis as a carrier of disease, as we are prone to regard the carriers of other diseases, then our business is to eliminate the carriers so far as possible. There are two things which the health officer can do, and do right now. One is to furnish free facilities for the diagnosis of syphilis cases. That is the first step. That is within the power, probably, of all of us to institute. The second thing is to see that adequate treatment is available, and I think that that can be summed in the procuring of some agent similar to salvarsan for free distribution. These two things we have tried to do in Massachusetts. We have established a laboratory where we made about 30,000 tests last year, and we are continuing that and enlarging it; and we have made salvarsan, but we have not yet made

it on a factory basis, so that it can be distributed in large quantities. We have just about concluded arrangements whereby the Institute of Technology can begin the manufacture on a large scale and the product can be made into salvarsan in the department laboratory. We hope to make that within the next two or three months, so that we can be actually distributing it to the people of Massachusetts. Those are two things that I think can and ought to be done by every State in the country.

As to pneumonia, certainly we ought to make pneumonia a reportable disease. It has been done in New York and will be done in Massachusetts in the next month. Within the last three months we have been satisfied that the serum against pneumonia, the anti-pneumonic serum, is efficacious. Even up to three months ago there was question about this, but there is no question now. I believed, longer ago than that, that it was efficacious when used against type 1, and we are going to manufacture that serum for distribution.

Dr. Biggs very properly has called attention to the fact that this product has been put out by commercial concerns, and is probably worthless in many instances; therefore the necessity of close control under the standard established for the serum by the United States Public Health Service. These, briefly, gentlemen, are some of the things that we can do against these tremendous factors in our death rate, and I do not mention what we have done in Massachusetts in any spirit of boastfulness—it seemed the obvious thing to do—but simply because it may be helpful in starting a discussion in which you may show me that I am absolutely wrong and that I have a wrong sense of proportion, and that we are tackling the wrong problem.

Dr. RUCKER. Mr. Chairman, I desire for just a moment, with your permission, to speak of the question of the control of syphilis. I heard an estimate given the other day of the number of syphilitics in this country by a man who has made a careful study of it. He prefaced his remarks by saying that any estimate of the number of syphilitics in America must, in the very nature of things, be a wild guess, but judging from his experience and taking the figures which he had determined from various sources, all the way from the cadets who reported at West Point, through the military services and through the civil examinations which he and other men had been able to make, it was his estimate that there were 8,000,000 syphilitics in the United States. That means that approximately 1 person in every 12 is syphilitic. Now, that is a tremendous figure.

Dr. McLaughlin has talked about the therapeutic attack. I think there is no doubt that the therapeutic attack and the work which may be done in that manner, is one of the most valuable agents we have, because it is aimed at the control of carriers.

There is one thought, though, that I think the State health officers might carry away with them very well, and that is in connection with the mobilization of the troops which is to occur during the next two years. Large numbers of young men of the age at which the incidence of syphilis is the highest, will be gathered together: they will not be subjected to the restraining influences of the home; they will be exposed to bad companions and in immediate contiguity to the places of encampment there will also be congregated a large number of those camp followers who come there for the purpose of pandering to the sexual desires of soldiers. I believe that the military forces are thoroughly aware of the danger in this regard and the experience of the New York troops on the border shows very clearly what can be done by intelligent supervision by line officers. As you may know, Gen. O'Ryan succeeded in keeping down venereal diseases very markedly in his camp simply by the exercise of military power and forcing prostitutes to move out of the immediate vicinity of the troops. It seems to me that the military authorities can handle this matter by direct control over their men, by the establishment of military zones, and by the establishment of zones in which houses of prostitution shall be out of bounds: but there is a place where the health officer can go right in and where he can exercise measures of wide influence. I believe that if every State health officer will take into his councils the health officers of the zone immediately contiguous to the zones occupied by the troops, and insist that they will take the matter up with their civil authorities and see to it that prostitutes who are following armies shall be run out of the zone, you can do much to prevent the occurrence of syphilis; and in the other cases the carriers can be followed up through the therapeutic attack. The point is that if you do not have syphilitic prostitutes pandering to the troops, you will not have any amount of syphilis among the troops; and therefore it is the duty, I believe, of every health officer to see to it in this emergency that our troops do not contract this disease, and that they shall withhold from them the agency which distributes the disease to them.

The SURGEON GENERAL. I should like to have Dr. Biggs tell us what he observed in France. I am very much interested in the means for prevention of tuberculosis and syphilis.

Dr. BIGGS. Mr. Chairman, I took up the time of the meeting last night in talking about tuberculosis. I am sorry to say that I do not know very much about what has been done in regard to venereal diseases in France among the troops. We did not have time to go carefully into that, but in a general way I was told that they had comparatively little trouble with venereal diseases with the troops in France.

It appeared that while the French troops suffered very severely with tuberculosis the British troops escaped almost entirely, and while the French troops have been comparatively free from trouble with venereal diseases the British troops suffered severely.

Dr. DOWLING. I was asked a question about one organization in Louisiana which came up for physical examination at the camp to which they were sent, and 40 out of 75 were rejected and sent back home because they had gonorrhea, and I was very anxious to know if there had been any investigation into that in any of the camps.

Dr. HAYNE. It was not as high as that in South Carolina. Out of the 2,500 men, at the examination of whom I was present, the average was about normal. These men were from all over the State. Of course South Carolina is not nearly so rural as Louisiana.

The SURGEON GENERAL. Are there any other remarks? We will now have the report of the resolutions committee, Dr. Bracken.

REPORT OF RESOLUTIONS COMMITTEE.

Dr. BRACKEN. The first resolution is:

Resolved, That the conference adopts as minimum morbidity tables for publication in annual reports of State and Territorial health authorities tables giving distribution of cases:

1. Chronologically by months.
2. By sex.
3. By 5-year age groups up to 25 years and by 10-year age groups after 25 years.
4. Termination, recovery, or death.
5. Geographically by counties and municipalities.

(It was moved and seconded that the resolution be adopted; and the question being taken, the motion was agreed to.)

Dr. BRACKEN. This resolution is submitted by the committee on health insurance:

Resolved, That in the judgment of this conference the use of the phrase "health insurance" to describe a system of sickness relief that makes no specific, positive, and definite provision for the conservation of health is liable to endanger the efficiency of existing health agencies and retard their further development.

Resolved, That in any scheme for health insurance, all activities looking toward the active conservation and promotion of health should be intrusted to the regularly established health conservation agencies, which should be reorganized or reinforced for that purpose, if necessary.

The committee recommends the passage of these resolutions.

(It was moved and seconded that the resolutions be adopted; and the question being taken, the motion was agreed to.)

Dr. BRACKEN. The fourth resolution is as follows:

Resolved, That the Secretary of the Treasury be requested, through the Surgeon General of the United States Public Health Service, to call to the

attention of the governors and the health authorities of the several States and Territories the important public health aspects of the annual conference of the State and Territorial health authorities with the United States Public Health Service, and to urge that due provision be made for the regular attendance of the proper health officials at the conferences, and for their attendance also on such committee meetings as may be necessary for the work of such conferences.

(It was moved and seconded that the resolution be adopted; and the question being taken, the motion was agreed to.)

Dr. BRACKEN (reading):

Whereas immediate knowledge of cases of communicable diseases (plague, cholera, typhoid fever, pulmonary tuberculosis, yellow fever, smallpox, leprosy, typhus fever, scarlet fever, diphtheria, measles, whooping-cough, poliomyelitis (infantile paralysis), Rocky Mountain spotted or tick fever, epidemic cerebro-spinal meningitis, and dysentery, and such other diseases as the Surgeon General of the United States Public Health Service may designate from time to time) recognized in one State, but obviously infected outside that State, and of persons leaving one State for another while in an infectious condition, and of persons leaving a State after exposure to a source or medium of infection of an acute infectious disease would be of great value to the health authorities of the States and Territories which may be concerned, and to the United States Public Health Service: Be it

Resolved, That during the present war immediate reciprocal notification in regard to such cases and carriers and exposed persons be made by State and Territorial health authorities on forms to be provided by the United States Public Health Service.

(It was moved and seconded that the resolution be adopted; and the question being taken, the motion was agreed to.)

Dr. BRACKEN. It has been suggested, not in the form of a resolution, that the Surgeon General be asked to issue a letter to judges and to city and county attorneys, stating that control and prevention of communicable disease is dependent upon notification, and that State and local health authorities can not protect the public against spread of disease unless notification is enforced, and that enforcement is impossible without their sympathetic understanding of the situation, and their support.

I presume that is not to be considered as a resolution, but rather as a request that should go to the Surgeon General, and I ask to present it.

Dr. SWARTS. I move that it be so submitted.

The SURGEON GENERAL. I will say to Dr. Bracken that the bureau will be very glad to carry out that recommendation.

Dr. CRUMBINE. I ask that he accept this addition to that—that the letter be sent to the prosecuting attorneys, because they bring these matters to the attention of the governors.

The SURGEON GENERAL. Are there any other resolutions?

APPOINTMENT OF COMMITTEE.

The SURGEON GENERAL. The chair will announce the following as members of a committee to report at the next conference on collection of public-health information by correspondence: Drs. Hurty, McCormack, Crumbine, Keifer, and Trask.

Gentlemen, this concludes our deliberations. I am sure we have had a very profitable meeting during the last two days. After all has been said and done, the success of the work to-day proves that we are on a firm foundation; but we should not forget that there is room for improvement.

In behalf of the department and the bureau, I thank you very much for your attendance. The meeting stands adjourned.

(Thereupon the conference adjourned sine die.)

STATE AND TERRITORIAL EXECUTIVE HEALTH OFFICERS.

Alabama.—Dr. S. W. Welch, State health officer, Montgomery.

Alaska.—Gov. Thomas Riggs, jr., ex officio commissioner of health, Juneau.

Arizona.—Dr. W. O. Sweek, superintendent of public health, Phoenix.

Arkansas.—Dr. C. W. Garrison, State health officer, Little Rock.

California.—Dr. W. H. Kellogg, secretary of State board of health, Sacramento.

Colorado.—Dr. Erlo E. Kennedy, secretary of State board of health, Denver.

Connecticut.—Dr. John T. Black, State commissioner of health, Hartford.

Delaware.—Dr. A. E. Frantz, secretary of State board of health, Wilmington.

District of Columbia.—Dr. W. C. Woodward, health officer, Washington.

Florida.—Dr. W. H. Cox, State health officer, Jacksonville.

Georgia.—Dr. T. F. Abercrombie, secretary of State board of health, Atlanta.

Hawaii.—Dr. J. S. B. Pratt, president of board of health, Honolulu.

Idaho.—Dr. E. T. Biwer, secretary of State board of health, Boise.

Illinois.—Dr. C. St. Clair Drake, secretary of State board of health, Springfield.

Indiana.—Dr. J. N. Hurty, State commissioner of health, Indianapolis.

Iowa.—Dr. G. H. Sumner, secretary of State board of health, Des Moines.

Kansas.—Dr. S. J. Crumbine, secretary of State board of health, Topeka.

Kentucky.—Dr. J. N. McCormack, secretary of State board of health, Bowling Green.

Louisiana.—Dr. Oscar Dowling, State health officer, New Orleans.

Maine.—Dr. L. D. Bristol, State commissioner of health, Augusta.

Maryland.—Dr. J. S. Fulton, State health officer, Baltimore.

Massachusetts.—Dr. E. R. Kelley, State commissioner of health, Boston.

Michigan.—Dr. R. M. Olin, secretary of State board of health, Lansing.

Minnesota.—Dr. H. M. Bracken, secretary of State board of health, St. Paul.

Mississippi.—Dr. W. S. Leathers, secretary of State board of health, Jackson.

Missouri.—Dr. George H. Jones, secretary of State board of health, Jefferson City.

Montana.—Dr. W. F. Cogswell, State health officer, Helena.

Nebraska.—Dr. W. F. Wild, State commissioner of health, Lincoln.

Nevada.—Dr. S. L. Lee, secretary of State board of health, Carson City.

New Hampshire.— — — — —, secretary of State board of health, Concord.
New Jersey.—Dr. Jacob C. Price, director of State department of health, Branchville.

New Mexico.—Dr. R. H. McClanahan, secretary of State board of health, Las Vegas.

New York.—Dr. Hermann M. Biggs, State commissioner of health, Albany.

North Carolina.—Dr. W. S. Rankin, State health officer, Raleigh.

North Dakota.—Dr. C. J. McGurren, superintendent of public health, Devils Lake.

Ohio.—Dr. A. W. Freeman, State commissioner of health, Columbus.

Oklahoma.—Dr. John W. Duke, State commissioner of health, Oklahoma City.

Oregon.—Dr. R. L. E. Holt, acting State health officer, Portland.

Pennsylvania.—Dr. B. F. Royer, acting State commissioner of health, Harrisburg.

Philippine Islands.—Dr. J. D. Long, director of public health, Manila.

Porto Rico.—Dr. A. Ruiz Soler, commissioner of health, San Juan.

Rhode Island.—Dr. Byron U. Richards, State commissioner of health, Providence.

South Carolina.—Dr. James A. Hayne, State health officer, Columbia.

South Dakota.—Dr. P. B. Jenkins, superintendent of public health, Waubay.

Tennessee.—Dr. R. Q. Lillard, secretary of State board of health, Nashville.

Texas.—Dr. W. B. Collins, State health officer, Austin.

Utah.—Dr. T. B. Beatty, secretary of State board of health, Salt Lake City.

Vermont.—Dr. Charles F. Dalton, secretary of State board of health, Burlington.

Virginia.—Dr. Ennion G. Williams, State commissioner of health, Richmond.

Washington.—Dr. T. D. Tuttle, State commissioner of health, Seattle.

West Virginia.—Dr. S. L. Jepson, State commissioner of health, Charleston.

Wisconsin.—Dr. C. A. Harper, secretary of State board of health, Madison.

Wyoming.—Dr. C. Y. Beard, State health officer, Cheyenne.



